Appendix B

Clay Sample Descriptions

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The sampling strategy and procedures for collecting clay samples are fully described in Chapter 4, as are the field and laboratory performance tests designed to evaluate the suitability of the samples for making low-fired earthenware. Tables B.1–B.7 present the resulting data.

Tables B.1 and B.2 describe the provenience and physical properties, respectively, of the 84 clay samples collected for this study. The drying and firing behavior of the 62 samples from which 10-×-10-×-1-cm test tiles were fashioned are summarized in Tables B.3 and B.4, and Table B.5 contains observations made during replication experiments. The 42 samples submitted for NAA, XRD, and petrographic analyses are listed in Tables B.6 and B.7.

A commercial firm prepared thin sections of the fired test tiles. Photographs were made of the flat sections of pucks using a 35mm SLR camera body mounted on an Olympus SE40 binocular microscope with incident light provided by Fostec EKE fiber-optics (Figures B.1–B.4). All puck surfaces were wetted before photographing, but some dried unevenly. Moisture absorption was influenced by partial penetration of epoxy, and as a result some samples appear to have a dark horizontal band across their centers approximately where one might expect to see a reduced core; however, this dark band has nothing to do with firing temperature or atmosphere.

Table B. 1. Descriptive Information for Clay Samples: Provenience.

Sample ID	Drainage	Nearest Site(s)[a]	UTM[b] Northing	UTM[b] Easting	Sample Type	Geographic Setting
FBR001	Lower Little	31Cd750	3896570	0688812	transported	upland setting
FBR002	Lower Little	31Cd750/31Hk127[c]	3887458	0677832	transported	upland setting
FBR003	Lower Little	31Cd486/31Mr93/ 31Hk127/31Hk123	3892165	0674316	transported	upland setting
FBR004	Lower Little	31Cd486/31Mr93/ 31Hk127/31Hk123/ 31Ht392	3894404	0674308	transported (alluvial)	stream bank
FBR005	Lower Little	31Mr93/31Cd486/ 31Hk127/31Hk123	3896330	0669883	transported (alluvial)	floodplain
FBR006	Drowning Creek	31Sc87/31Sc71/ 31Mr241/31Mr253/ 31Mr259/31Hk59/ 31Hk715[c]	3879046	0648897	transported	road cut in upland setting
FBR007	Lower Little	31Hk715/31Hk59	3880183	0655285	transported (alluvial)	stream bank
FBR008	Lower Little	31Hk868/31Ht269/ 31Hk127	3888792	0662959	transported (marine)	upland setting
FBR009	Lower Little	31Hk123/31Hk127/ 31Hk868/31Mr93	3892747	0665640	transported	upland setting
FBR010	Lower Little	31Mr93/31Cd486/ 31Hk127/31Hk123	3896332	0669869	transported (alluvial)	floodplain
FBR011	Cape Fear	Breece	3884406	0695950	transported (alluvial)	stream bank
FBR012	Cape Fear	Breece	3884925	0695785	transported (alluvial)	floodplain
FBR013	Cape Fear	Breece	3885783	0695881	transported (alluvial)	floodplain
FBR014	Cape Fear	Breece	3883886	0694988	transported (alluvial)	stream bank
FBR015	Cape Fear	Breece	3884023	0694950	transported (alluvial)	streambed
FBR016	Cape Fear	Breece	3885187	0694580	transported (alluvial)	streambed
FBR017	Lower Little	31Ht269/31Ht273/ 31Ht392	3903843	0681641	transported (alluvial)	stream bank
FBR018	Lower Little	31Ht269/31Ht273/ 31Ht392	3903844	0681603	transported (alluvial)	stream bank
FBR019	Pee Dee	Kolb	3805454	0618115	transported (lacustrine)	swampy pond edge
FBR020	Pee Dee	Kolb	3805299	0617891	transported (alluvial)	swampy floodplain

Table B. 1. Descriptive Information for Clay Samples: Provenience (continued).

Sample ID	Drainage	Nearest Site(s)[a]	UTM[b] Northing	UTM[b] Easting	Sample Type	Geographic Setting
FBR021	Pee Dee	Kolb	3804557	0617277	transported (alluvial)	swampy floodplain
FBR022	Pee Dee	Kolb	3804963	0620363	transported (alluvial)	swampy floodplain
FBR023	Pee Dee	Kolb[c]	3814785	0609741	transported (lacustrine)	oxbow bank
FBR024	Pee Dee	Kolb	3805177	0620459	transported (alluvial)	riverbank
FBR025	Pee Dee	Kolb	3806036	0620260	transported (alluvial)	riverbank
FBR026	Pee Dee	Kolb	3806380	0620093	transported (alluvial)	swampy upper river terrace
FBR027	Pee Dee	Kolb	3804425	0617564	transported (alluvial)	stream bank
FBR028	Haw	Haw River	3950457	0672311	transported (alluvial)	floodplain
FBR029	Haw	Haw River	3950470	0672279	transported (alluvial)	floodplain
FBR030	Haw	Haw River	3946847	0673360	transported (lacustrine)	lakeshore
FBR031	Haw	Haw River	3945995	0673247	transported (alluvial)	streambed
FBR032	Haw	Haw River	3955697	0671194	transported (alluvial)	stream bank
FBR033	Haw	Haw River	3955697	0671194	transported (alluvial)	stream bank
FBR034	Haw	Haw River	3953162	0676533	transported (lacustrine)	lakeshore
FBR035	Haw	Haw River	3953225	0676289	transported	shallow basin near lake
FBR036	Haw	Haw River	3953225	0676289	transported	shallow basin near lake
FBR037	Haw	Haw River[c]	3960071	0677576	transported	muddy basin near lake
FBR038	Haw	Haw River[c]	3963409	0678625	transported (lacustrine)	lakeshore
FBR039	Haw	Haw River[c]	3963491	0679059	transported (lacustrine)	lakeshore
FBR040	Haw	Haw River[c]	3963491	0679059	transported (lacustrine)	lake bottom
FBR041	Haw	Haw River[c]	3955654	0679577	transported (lacustrine)	lakeshore
FBR042	Haw	Haw River[d]	3974555	0677701	transported (alluvial)	stream bank
FBR043	Haw	Haw River[d]	3974619	0677779	transported (alluvial)	floodplain
FBR044	Haw	Haw River[d]	3976552	0683043	transported (alluvial)	stream bank
FBR045	Haw	Haw River[d]	3976465	0683045	transported (alluvial)	swampy floodplain
FBR046	Yadkin	Doerschuk	3920259	0588642	transported (alluvial)	stream bank
FBR047	Yadkin	Doerschuk	3919683	0588766	transported (alluvial)	riverbank
FBR048	Yadkin	Doerschuk	3918363	0588424	transported (alluvial)	riverbank
FBR049	Yadkin	Doerschuk	3919007	0589049	transported (alluvial)	stream bank
FBR050	Yadkin	Doerschuk	3918787	0588793	transported (alluvial)	riverbank
FBR051	Yadkin	Doerschuk	3918787	0588793	transported (alluvial)	riverbank
FBR052	Yadkin	Doerschuk	3918739	0588663	transported (alluvial)	stream bank

Table B. 1. Descriptive Information for Clay Samples: Provenience (continued).

Sample ID	Drainage	Nearest Site(s)[a]	UTM[b] Northing	UTM[b] Easting	Sample Type	Geographic Setting
FBR053	Yadkin	Doerschuk	3916353	0587073	transported (alluvial)	stream bank
FBR054	Yadkin	Doerschuk	3916353	0587073	transported (alluvial)	stream bank
FBR055	Yadkin	Doerschuk	3916289	0586491	transported (alluvial)	floodplain
FBR056	Yadkin	Doerschuk	3915713	0585659	transported (alluvial)	riverbank
FBR057	Yadkin	Doerschuk	3916505	0585337	transported (alluvial)	floodplain
FBR058	Deep	-	3931674	0649907	transported (alluvial)	riverbank
FBR059	Lower Little	31Hk715/31Hk59	3879989	0655185	transported (lacustrine?)	stream bank/ former mill pond
FBR060	Lower Little	31Hk715/31Hk59	3879989	0655174	transported (lacustrine?)	stream bank/ former mill pond
FBR061	Lower Little	31Hk715/31Hk59	3879978	0655123	transported (alluvial)	stream bank
FBR062	Lower Little	31Hk59	3880798	0652464	transported	wetland
FBR063	Lower Little	31Hk59	3880738	0652444	transported	wetland
FBR064	Lower Little	31Hk59	3880834	0652511	transported	wetland
FBR065	Lower Little	31Hk59	3880845	0652672	transported	wetland
FBR066	Lower Little	31Hk59	3880842	0652357	transported	wetland
FBR067	Lower Little	31Hk59	3880990	0652542	transported	wetland
FBR068	Deep	-	3936119	0657466	transported (lacustrine)?	pond (clay pit?) edge
FBR069	Deep	-	3936306	0656984	sedentary	clay pit in upland setting
FBR070	Deep	-	3936306	0656984	sedentary	clay pit in upland setting
FBR071	Deep	-	3936306	0656984	sedentary	clay pit in upland setting
FBR072	Deep	-	3935791	0656593	sedentary	clay pit in upland setting
FBR073	Deep	-	3935791	0656593	sedentary	clay pit in upland setting
FBR074	Deep	-	3935781	0656546	sedentary	clay pit in upland setting
FBR075	Deep	-	3935750	0656557	sedentary	clay pit in upland setting
FBR076	Deep	-	3935703	0656548	sedentary	road cut in upland setting
FBR077	Deep	-	3936918	0654570	sedentary	clay pit in upland setting
FBR078	Deep	-	3936921	0654541	sedentary	clay pit in upland setting
FBR080	Deep	-	3931674	0649907	transported (alluvial)	riverbank
FBR081	Waccamaw	Waccamaw[c]	3805824	0738743	transported (alluvial)	floodplain
FBR082	Waccamaw	Waccamaw[c]	3805737	0735133	transported (alluvial)	roadside ditch in floodplain
FBR083	Waccamaw	Waccamaw[c]	3805762	0735128	transported (alluvial)	roadside ditch in floodplain

Table B. 1. Descriptive Information for Clay Samples: Provenience (continued).

Sample ID	Drainage	Nearest Site(s)[a]	UTM[b] Northing	UTM[b] Easting	Sample Type	Geographic Setting
FBR084	Waccamaw	Waccamaw[c]	3805587	0739824	transported (alluvial)	floodplain
FBR085	Waccamaw	Waccamaw[c]	3805587	0739824	transported (alluvial)	streambed

[a] Refers to the nearest archaeological site(s) from which pottery samples were drawn for this study.

[b] NAD 1927 datum.

[c] Nearest site(s) more than 7.5 km away.

[d] Nearest site more than 15 km away.

Table B.2. Descriptive Information for Clay Samples: Physical Properties.

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR001	Lower Little	7.5YR5/6 strong brown	silty clay	weakly plastic	could not form loop	weak	lean	1
FBR002	Lower Little	2.5YR4/6 red	clayey silt; some grit	weakly plastic	could not form loop	weak	lean	1
FBR003	Lower Little	5YR5/6 yellowish red	sandy and clayey silt; some grit	weakly plastic	could not form loop	weak	lean	1
FBR004	Lower Little	10YR6/8 brownish yellow	slightly silty clay; blocky structure; some organics	weakly plastic	moderately stiff	moderately strong	lean	1
FBR005	Lower Little	2.5Y2.5/1 black	silty clay; some fine sand and grit	moderately plastic	stiff	weak	moderately lean	1
FBR006	Drowning Creek	5Y8/1 white	clay; blocky structure	weakly plastic	could not form loop	weak	lean	1
FBR007	Lower Little	10YR6/6 brownish yellow	silty clay	weakly plastic	moderately stiff	weak	lean	1
FBR008	Lower Little	2.5YR8/2 pinkish white	clay; blocky structure	weakly plastic	could not form loop	moderately strong	lean	1
FBR009	Lower Little	8/10Y8/1 light greenish gray	silty clay; large clay lumps	weakly plastic	could not form loop	weak	lean	1
FBR010	Lower Little	2.5Y5/1 gray	clayey silt; some fine sand and organics	weakly plastic	moderately stiff	moderately strong	lean	1
FBR011	Cape Fear	2.5Y5/2 grayish brown	clay; some medium sand, grit, and organics	plastic	stiff	strong	good	3

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR012	Cape Fear	2.5Y6/4 light yellowish brown	clay; some fine sand, gravel, and organics	plastic	stiff	strong	good	3
FBR013	Cape Fear	2.5Y6/4 light yellowish brown	clay; some fine sand and grit	plastic	stiff	weak	moderately lean	3
FBR014	Cape Fear	7.5YR4/4 brown	clay; some very fine sand	plastic	stiff	strong	good	2
FBR015	Cape Fear	5Y4/2 olive gray	clay; some fine and medium sand	plastic	moderately stiff	moderately strong	moderately lean	-
FBR016	Cape Fear	10YR6/4 light yellowish brown	clay; some organics	plastic	moderately stiff	weak	moderately lean	2
FBR017	Lower Little	10YR5/6 yellowish brown	clay; some fine sand and organics	plastic	stiff	strong	good	3
FBR018	Lower Little	2.5Y6/4 light yellowish brown	silty clay	weakly plastic	stiff	weak	moderately lean	-
FBR019	Pee Dee	2.5Y6/4 light yellowish brown	clay; some fine sand, grit, and organics	plastic	stiff	strong	good	4
FBR020	Pee Dee	2.5Y6/6 olive yellow	clay; some grit and organics	plastic	stiff	strong	good	3
FBR021	Pee Dee	10YR5/1 gray	clay; some fine sand and organics	plastic	stiff	strong	good	3

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR022	Pee Dee	2.5Y5/4 light olive brown	clay; some fine and medium sand and organics	plastic	stiff	moderately strong	good	3
FBR023	Pee Dee	2.5Y6/6 olive yellow	clay; some very fine sand, clay lumps, and organics	plastic	stiff	strong	good	4
FBR024	Pee Dee	2.5Y6/4 light yellowish brown	clay; some grit, fine sand, and clay lumps	plastic	moderately stiff	strong	fat?	3
FBR025	Pee Dee	2.5Y4/2 dark grayish brown	micaceous clay; some fine sand and small clay lumps	plastic	moderately stiff	strong	fat?	3
FBR026	Pee Dee	2.5Y6/6 olive yellow	clay; some fine sand, grit, and organics	moderately plastic	moderately stiff	moderately strong	moderately lean	3
FBR027	Pee Dee	10YR5/4 yellowish brown	clay; some grit, clay lumps, and organics	plastic	moderately stiff	strong	good	3
FBR028	Haw	2.5Y6/4 light yellowish brown	slightly silty clay; some fine sand, grit, quartz gravels and pebbles, and organics	plastic	moderately stiff	strong	moderately lean	2
FBR029	Haw	10YR6/4 light yellowish brown	silty clay; abundant gravels and pebbles	moderately plastic	moderately stiff	weak	moderately lean	1
FBR030	Haw	10YR6/4 light yellowish brown	clay; some grit, gravels, pebbles, and organics	weakly plastic	soft	moderately strong	moderately lean	3
FBR031	Haw	2.5Y6/6 olive yellow	clay; some fine sand and quartz gravels and pebbles	plastic	soft	moderately strong	moderately lean	-

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR032	Haw	2.5Y4/2 dark grayish brown	silty clay; some grit	plastic	soft	moderately strong	moderately lean	-
FBR033	Haw	10YR4/2 dark grayish brown	silty clay; some grit and organics	plastic	soft	strong	moderately lean	-
FBR034	Haw	10YR6/6 brownish yellow	clay; some fine sand, grit, and organics	moderately plastic	stiff	weak	moderately lean	1
FBR035	Haw	7.5YR6/6 reddish yellow	clay; some fine sand and organics	plastic	stiff	moderately strong	good	4
FBR036	Haw	2.5Y7/4 pale yellow	very sandy clay; some organics	moderately plastic	stiff	moderately strong	moderately lean	3
FBR037	Haw	10YR5/3 brown	clayey silt; some fine sand, grit, and organics	moderately plastic	moderately stiff	weak	moderately lean	1
FBR038	Haw	10YR6/6 brownish yellow	clay; some very fine sand and organics	moderately plastic	stiff	moderately strong	moderately lean	1
FBR039	Haw	5Y8/2 pale yellow	clay; some very fine sand and organics	plastic	stiff	moderately strong	good	4
FBR040	Haw	2.5Y6/6 olive yellow	clay; some fine sand and organics	plastic	stiff	strong	good	8
FBR041	Haw	2.5Y7/3 pale yellow	very sandy clay; some organics	plastic	moderately stiff	moderately strong	good	2
FBR042	Haw	5Y7/2 light gray	very sandy clay	plastic	soft	moderately strong	moderately lean	1

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR043	Haw	10YR5/4 yellowish brown	micaceous clay; blocky structure; some fine to medium sand and organics	moderately plastic	stiff	weak	moderately lean	3
FBR044	Haw	2.5Y7/3 pale yellow	clay; some very fine sand and organics	moderately plastic	moderately stiff	moderately strong	moderately lean	1
FBR045	Haw	10YR5/4 yellowish brown	very silty clay; some fine sand and organics	plastic	moderately stiff	weak	moderately lean	1
FBR046	Yadkin	5Y5/2 olive gray	silty clay; some fine and medium sand and organics	moderately plastic	soft	weak	moderately lean	-
FBR047	Yadkin	2.5Y5/4 light olive brown	very silty clay; some fine sand and organics	moderately plastic	soft	moderately strong	lean	-
FBR048	Yadkin	5Y5/2 olive gray	silty clay; some very fine sand and organics	moderately plastic	soft	moderately strong	moderately lean	1
FBR049	Yadkin	5Y5/1 gray	clay; some silt, very fine sand, and organics	plastic	soft	moderately strong	moderately lean	5
FBR050	Yadkin	5Y4/2 olive gray	very silty clay; fine sand and abundant organics	weakly plastic	could not form loop	weak	lean	-
FBR051	Yadkin	5Y5/2 olive gray	very silty clay; some fine sand and abundant organics	plastic	soft	moderately strong	moderately lean	1
FBR052	Yadkin	2.5Y4/3 olive brown	silty clay; some fine sand and organics	moderately plastic	soft	weak	moderately lean	-
FBR053	Yadkin	2.5Y5/4 light olive brown	silty clay; some fine sand	moderately plastic	moderately stiff	weak	moderately lean	-

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR054	Yadkin	5Y5/3 olive	silty clay; some fine sand	moderately plastic	soft	moderately strong	moderately lean	1
FBR055	Yadkin	5Y5/2 olive gray	silty clay; some fine sand and organics	moderately plastic	soft	moderately strong	moderately lean	1
FBR056	Yadkin	2.5Y5/4 light olive brown	very silty and sandy clay; some organics	moderately plastic	soft	moderately strong	moderately lean	-
FBR057	Yadkin	5Y4/2 olive gray	silty clay; some fine sand and organics	moderately plastic[d]	soft[d]	strongd	lean	-
FBR058	Deep	10YR5/4 yellowish brown	silty clay; blocky structure; some fine sand, grit, clay lumps, and organics	moderately plastic	moderately stiff	moderately strong	moderately lean	1
FBR059	Lower Little	2.5Y7/2 light gray	fine micaceous sand	moderately plastic	moderately stiff	weak	moderately lean	1
FBR060	Lower Little	2.5Y7/2 light gray	fine micaceous sand	moderately plastic	moderately stiff	weak	moderately lean	-
FBR061	Lower Little	2.5Y2.5/1 black	organic-rich silt	moderately plastic	soft	strong	moderately lean	-
FBR062	Lower Little	2.5Y2.5/1 black	organic-rich silt	moderately plastic	soft	strong	moderately lean	-
FBR063	Lower Little	2. 4/1/5PB dark bluish gray	clayey silt; some micaceous sand and organics	weakly plastic	moderately stiff	weak	lean	-
FBR064	Lower Little	2.5Y3/1 very dark gray	organic-rich silt	moderately plastic	soft	strong	moderately lean	-

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR065	Lower Little	2.5Y4/1 dark gray	organic-rich silt	moderately plastic	soft	strong	moderately lean	-
FBR066	Lower Little	2.5Y5/1 gray	clay; some fine sand, silt, and organics	weakly plastic	soft	weak	lean	1
FBR067	Lower Little	2.5Y5/1 gray	clay; soft; some silt, a very small amount of fine sand, and abundant organics	moderately plastic	moderately stiff	weak	moderately lean	2
FBR068	Deep	7.5YR5/6 strong brown	slightly silty clay; blocky structure; hard; iron films on ped faces	weakly plastic	stiff	moderately strong	moderately lean	-
FBR069	Deep	7.5YR4/6 strong brown	silty or loamy clay; some organics	plastic	stiff	weak	moderately lean	1
FBR070	Deep	2.5YR4/2 weak red	silty clay; very coarse clay lumps	plastic	stiff	moderately strong	good	1
FBR071	Deep	7.5YR5/4 brown	clay; some silt	plastic	moderately stiff	moderately strong	good	1
FBR072	Deep	5YR3/4 dark reddish brown	silty clay; many sands, gravels, and small cobbles; some organics	weakly plastic	soft	weak	lean	1
FBR073	Deep	2.5YR4/4 reddish brown	clay; abundant clay lumps	weakly plastic	moderately stiff	weak	lean	-
FBR074	Deep	7.5YR4/6 strong brown	very sandy clay; some gravels	plastic	stiff	weak	moderately lean	1
FBR075	Deep	7.5YR5/6 strong brown	clay; some organic matter	plastic	moderately stiff	weak	moderately lean	1

Table B.2. Descriptive Information for Clay Samples: Physical Properties (continued).

Sample ID	Drainage	Plastic Munsell Color	Description	Plasticity Ranking[a]	Stiffness Ranking[b]	Strength Ranking[c]	Workability	Test Tiles (*n*)
FBR076	Deep	2.5YR4/2 weak red	clay; blocky structure; clay lumps and gravels	plastic	soft	weak	moderately lean	-
FBR077	Deep	2.5YR4/2 weak red	clay; clay lumps, gravels, and organics	plastic	stiff	weak	moderately lean	1
FBR078	Deep	2.5YR4/2 weak red	gritty clay; some gravels and fine organics	moderately plastic	moderately stiff	weak	moderately lean	-
FBR080	Deep	2.5Y4/2 dark grayish brown	clay	plastic	soft	moderately strong	fat?	1
FBR081	Waccamaw	2.5Y5/4 light olive brown	sandy clay; organics	moderately plastic	stiff	moderately strong	good	1
FBR082	Waccamaw	5Y5/2 olive gray	clay; some very fine sand	plastic	stiff	moderately strong	good	1
FBR083	Waccamaw	5Y4/2 olive gray	clay; some fine to medium sand and organics	plastic	stiff	moderately strong	good	1
FBR084	Waccamaw	2.5Y6/3 light yellowish brown	clay; some fine sand	plastic	stiff	moderately strong	good	1
FBR085	Waccamaw	2.5Y6/3 light yellowish	clay; some fine to medium sand and organics	plastic	stiff	moderately strong	good	1

[a] The plasticity ranking is based on the results of the coil test. Plastic samples did not crack when coiled, moderately-plastic samples cracked, and weakly plastic samples broke into multiple segments.

[b] The stiffness ranking is based on the results of the loop test. Stiff samples retained their shapes during the test, moderately-stiff samples sagged, and soft samples collapsed. Samples which could not be formed into a loop could not be tested.

[c] The strength ranking is based on the results of the ball test. Strong samples did not crack when compressed, moderately-strong samples cracked slightly, and weak samples cracked extensively.

[d] This sample was too soft to work until sand was added to stiffen it. Performance test results are therefore based on the sand-tempered sample.

Table B.3. Descriptive Information for Clay Samples: Drying Behavior.

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR001:							
1	-	10YR7/6 yellow	6	-	108.5	-	moderate warping
FBR002:							
1	-	2.5YR4/8 red	-	-	-	-	crumbled during drying; could not be weighed, measured, or fired
FBR003:							
1	-	5YR7/6 reddish yellow	2	-	145.9	-	minor warping; began to crumble during oven-drying
FBR004:							
1	-	10YR7/3 very pale brown	10	-	122.4	-	minor warping
FBR005:							
1	-	2.5Y4/0 dark gray	4	-	118.5	-	minor warping
FBR006:							
1	-	5YR8/1 white	6	-	92.5	-	moderate warping
FBR007:							
1	-	10YR8/4 very pale brown	8	-	109.9	-	moderate warping
FBR008:							
1	-	5YR8/1 white	6	-	128.4	-	moderate warping
FBR009:							
1	-	5Y8/1 white	12	-	100.7	-	moderate warping

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR010:							
1	-	5YR7/1 light gray	4	-	148.6	-	minor warping
FBR011:							
1	-	10YR7/2 light gray	8	167.1	138.1	21.0	minor warping
2	10% nonlocal grog[a]	10YR7/2 light gray	8	-	141.8	-	moderate warping
3	10% local grog[b]	2.5Y6/2 light brownish gray	8	183.9	139.6	31.7	minor warping
FBR012:							
1	-	10YR6/4 light yellowish brown	10	175.7	134.3	30.8	moderate warping
2	10% nonlocal grog[a]	2.5Y6/4 light yellowish brown	10	-	127.4	-	moderate warping
3	15% local grog[b]	2.5Y6/4 light yellowish brown	10	174.6	131.2	33.1	minor warping
FBR013:							
1	-	2.5Y6/4 light yellowish brown	10	177.6	136.4	30.2	minor warping; minor cracking
2	10% nonlocal grog[a]	2.5Y7/4 pale yellow	8	-	134.1	-	moderate warping; cracking
3	15% local grog[b]	2.5Y7/2 light gray	8	174.4	136.1	28.1	moderate warping; minor cracking
FBR014:							
1	-	10YR6/4 light yellowish brown	10	173.0	124.8	38.6	moderate warping; minor cracking
2	15% local grog[b]	10YR6/4 light yellowish brown	8	173.7	126.0	37.9	moderate warping; cracking

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR016:							
1	-	10YR7/3 very pale brown	10	172.4	125.1	37.8	moderate warping; minor cracking
2	15% local grog[b]	2.5Y7/4 pale yellow	8	170.2	125.6	35.5	moderate warping; minor cracking
FBR017:							
1	-	10YR6/6 brownish yellow	16	158.4	102.6	54.4	significant warping; minor cracking
2	10% local grog[b]	10YR6/6 brownish yellow	12	163.7	110.4	48.3	moderate warping; cracking
3	10% Lower Little sand (FBR092)	10YR6/8 brownish yellow	12	175.8	120.1	46.4	moderate warping
FBR019:							
1	-	10YR8/1 white	8	174.2	125.3	39.0	moderate warping
2	10% unprovenienced sand A[c]	10YR8/1 white	8	173.3	128.0	35.4	moderate warping
3	20% unprovenienced sand A[c]	10YR8/1 white	8	178.5	133.8	33.4	moderate warping
4	10% local grog[b]	10YR8/1 white	8	181.4	133.5	35.9	minor warping; cracking
FBR020:							
1	-	2.5Y7/4 pale yellow	6	181.9	131.0	38.9	moderate warping
2	10% local grog[b]	10YR8/2 white	8	191.7	138.4	38.5	minor warping; cracking
3	15% Jordan Lake sand	10YR8/1 white	8	205.1	153.8	33.4	moderate warping; cracking

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR021:							
1	-	2.5Y6/2 light brownish gray	10	156.4	100.8	55.2	moderate warping
2	15% Jordan Lake sand	10YR6/1 gray	10	163.4	108.4	50.7	moderate warping; minor cracking
3	10% local grog[b]	10YR6/1 gray	10	181.1	118.1	53.3	moderate warping; cracking
FBR022:							
1	-	10YR8/2 white	8	171.8	122.3	40.5	moderate warping
2	15% unprovenienced sand A[c]	10YR8/1 white	6	188.4	144.2	30.7	minor warping; minor cracking
3	15% local grog[b]	10YR8/1 white	6	186.9	136.7	36.7	minor warping; minor cracking
FBR023:							
1	-	2.5Y7/4 pale yellow	12	169.1	118.9	42.2	moderate warping; minor cracking
2	15% unprovenienced sand D[d]	2.5Y7/4 pale yellow	10	159.4	119.0	33.9	minor warping; minor cracking
3	10% local grog[b]	10YR7/4 very pale brown	10	160.6	114.6	40.1	moderate warping; minor cracking
4	10% nonlocal grog[a]	2.5Y7/4 pale yellow	10	167.5	122.0	37.3	minor warping
FBR024:							
1	-	2.5Y7/4 pale yellow	8	184.1	139.0	32.4	moderate warping

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
2	15% unprovenienced sand D[d]	2.5Y7/4 pale yellow	6	192.7	154.3	24.9	minor warping
3	10% local grog[b]	10YR7/4 very pale brown	6	185.0	142.2	30.1	minor warping; minor cracking
FBR025:							
1	-	10YR7/2 light gray	8	156.7	104.3	50.2	moderate warping; minor cracking
2	10% local grog[b]	10YR7/1 light gray	6	168.5	117.4	43.5	moderate warping; minor cracking
3	15% unprovenienced sand D[d]	10YR7/1 light gray	8	178.7	129.5	38.0	moderate warping; cracking
FBR026:							
1	-	2.5Y7/4 pale yellow	10	165.8	111.1	49.2	moderate warping
2	15% unprovenienced sand D[d]	2.5Y7/4 pale yellow	8	191.6	141.3	35.6	minor warping; minor cracking
3	10% local grog[b]	2.5Y7/4 pale yellow	8	164.7	114.7	43.6	minor warping; minor cracking
FBR027:							
1	-	10YR7/3 very pale brown	10	167.9	114.0	47.3	moderate warping
2	10% local grog[b]	10YR7/3 very pale brown	8	167.5	117.0	43.2	moderate warping; minor cracking
3	15% unprovenienced sand A[c]	10YR7/3 very pale brown	8	168.9	121.8	38.7	moderate warping; minor cracking

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR028:							
1	-	2.5Y7/6 yellow	6	184.9	142.1	30.1	moderate warping
2	20% Jordan Lake sand	10YR7/6 yellow	6	193.3	150.9	28.1	moderate warping; cracking
FBR029:							
1	>30% natural[e]	2.5Y7/4 pale yellow	4	205.4	166.1	23.7	minor warping; minor cracking
FBR030:							
1	>20% natural[e]	10YR8/6 yellow	8	175.1	127.2	37.7	moderate warping; minor cracking
2	5% Jordan Lake sand	10YR7/6 yellow	8	185.5	136.8	35.6	moderate warping; minor cracking
3	10% Jordan Lake sand	10YR7/6 yellow	8	194.4	149.3	30.2	moderate warping; minor cracking
FBR034:							
1	-	10YR7/4 very pale brown	10	177.9	128.8	38.1	moderate warping
FRB035:							
1	-	7.5YR5/6 strong brown	16	164.1	106.8	53.7	significant warping
2	10% Jordan Lake sand	7.5YR5/6 strong brown	12	168.5	116.0	45.3	moderate warping
3	15% Jordan Lake sand	7.5YR5/6 strong brown	12	175.9	126.9	38.6	moderate warping
4	10% Richmond County quartz (FBR087)	7.5YR6/6 reddish yellow	10	197.6	145.3	36.0	moderate warping; minor cracking
FBR036:							
1	-	2.5Y7/4 pale yellow	10	186.6	145.7	28.1	moderate warping

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
2	10% Richmond County quartz (FBR087)	10YR8/1 white	8	202.8	165.7	22.4	moderate warping; minor cracking
3	15% Jordan Lake sand	10YR8/1 white	8	203.9	167.2	21.9	moderate warping; minor cracking
FBR037:							
1	-	10YR6/3 pale brown	6	203.2	166.3	22.2	moderate warping
FBR038:							
1	-	10YR6/4 light yellowish brown	14	169.4	119.1	42.2	moderate warping
FBR039:							
1	-	10YR7/1 light gray	10	176.3	129.0	36.7	moderate warping
2	5% Jordan Lake sand	10YR7/1 light gray	10	176.2	133.4	32.1	moderate warping
3	10% Jordan Lake sand	10YR7/1 light gray	8	184.4	142.1	29.8	moderate warping
4	10% Richmond County quartz (FBR087)	5Y7/2 light gray	10	193.5	149.1	29.8	moderate warping; minor cracking
FBR040:							
1	-	10YR6/4 light yellowish brown	12	169.3	119.1	42.1	moderate warping
2	10% Richmond County quartz (FBR087)	10YR7/4 very pale brown	10	172.7	127.8	35.1	moderate warping; minor cracking
3	15% Jordan Lake sand	10YR7/4 very pale brown	10	201.9	152.3	32.6	minor warping; minor cracking

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
4	10% weathered granitic rock (FBR088)	10YR6/6 brownish yellow	8	185.9	139.6	33.2	minor warping
5	10% weathered granitic rock (FBR089)	10YR6/6 brownish yellow	10	167.7	121.3	38.3	minor warping
6	10% weathered metavolcanic rock (FBR090)	10YR6/6 brownish yellow	10	174.3	126.6	37.7	minor warping
7	10% fresh diabase (FBR091)	10YR6/6 brownish yellow	10	171.5	124.6	37.6	minor warping
8	10% Deep River quartz (FBR086)	10YR6/6 brownish yellow	12	171.4	124.0	38.2	moderate warping
FBR041:							
1	-	10YR8/1 white	10	192.7	152.2	26.6	moderate warping
2	10% Richmond County quartz (FBR087)	10YR8/1 white	8	199.7	163.3	22.3	moderate warping; cracking
FBR042:							
1	-	2.5Y7/2 light gray	8	190.8	153.8	24.1	moderate warping
FBR043:							
1	-	10YR6/4 light yellowish brown	12	189.9	141.1	34.6	minor warping
2	10% Richmond County quartz (FBR087)	10YR6/4 light yellowish brown	8	193.2	149.6	29.1	minor warping; minor cracking
3	15% Morgan Creek sand	10YR6/4 light yellowish brown	8	188.9	145.8	29.6	moderate warping; cracking

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR044:							
1	-	2.5Y7/2 light gray	8	180.6	140.4	28.6	moderate warping
FBR045:							
1	-	10YR7/2 light gray	10	175.2	129.6	35.2	moderate warping
FBR048:							
1	-	10YR8/1 white	8	167.1	118.9	40.5	minor warping; minor cracking
FBR049:							
1	-	2.5Y6/2 light brownish gray	8	184.5	139.1	32.6	minor warping; minor cracking
2	10% Richmond County quartz (FBR087)	2.5Y6/2 light brownish gray	6	178.9	137.6	30.0	moderate warping
3	10% weathered granitic rock (FBR089)	2.5Y6/2 light brownish gray	6	181.7	139.3	30.4	minor warping
4	10% weathered metavolcanic rock (FBR090)	2.5Y6/2 light brownish gray	6	178.6	137.6	29.8	moderate warping
5	10% fresh diabase (FBR091)	2.5Y6/2 light brownish gray	4	181.5	137.3	32.2	moderate warping
FBR051:							
1	-	10YR7/3 very pale brown	8	165.9	113.9	45.7	minor warping
FBR054:							
1	-	2.5Y6/4 light yellowish brown	8	187.2	141.9	31.9	moderate warping

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR055:							
1	-	10YR6/4 light yellowish brown	8	182.1	132.7	37.2	minor warping
FBR058:							
1	-	10YR7/3 very pale brown	6	184.5	147.8	24.8	minor warping
FBR059:							
1	-	2.5Y8/2 white	8	173.1	130.2	32.9	minor warping
FBR066:							
1	-	7.5YR7/0 light gray	8	-	91.8	-	moderate warping
FBR067:							
1	-	7.5YR6/0 gray	12	121.8	60.4	101.7	significant warping
2	10% Lower Little sand (FBR092)	7.5YR6/0 gray	10	135.7	71.6	89.5	moderate warping
FBR069:							
1	-	10YR6/6 brownish yellow	8	176.0	139.7	26.0	moderate warping
FBR070:							
1	-	5YR5/2 reddish gray	10	155.0	120.8	28.3	no warping or cracking
FBR071:							
1	-	7.5YR5/4 brown	8	172.0	136.5	26.0	moderate warping
FBR072:							
1	-	5YR5/4 reddish brown	4	187.0	153.6	21.7	minor warping

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations
FBR074:							
1	-	-	8	184.0	149.3	23.2	minor warping
FBR075:							
1	-	10YR6/4 light yellowish brown	8	178.0	143.4	24.1	minor warping
FBR077:							
1	-	5YR6/3 light reddish brown	8	162.0	126.0	28.6	moderate warping
FBR080:							
1	-	10YR7/2 light gray	8	179.8	134.4	33.8	moderate warping
FBR081:							
1	-	2.5Y5/4 light olive brown	10	193.0	155.5	24.1	minor warping
FBR082:							
1	-	5Y6/2 light olive gray	12	174.6	129.7	34.6	minor warping
FBR083:							
1	-	5Y5/3 olive	10	196.7	156.0	26.1	minor warping
FBR084:							
1	-	5Y6/3 pale olive	12	163.8	115.9	41.3	moderate warping
FBR085:							
1	-	2.5Y6/4 light yellowish brown	14	172.3	124.0	39.0	moderate warping

[a] Nonlocal grog was made by crushing unprovenienced sherds.

[b] Local grog was made by crushing fired test tiles fashioned from the sample clay.

[c] Unprovenienced sand A is a well-sorted, subrounded coarse quartz sand with occasional dark mineral inclusions.

Table B.3. Descriptive Information for Clay Samples: Drying Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Dry Munsell Color	Linear Drying Shrinkage (%)	Plastic Weight (g)	Dry Weight (g)	Water of Plasticity (%)	Post-Drying Observations

[d] Unprovenienced sand D is a mixture of subrounded and subangular coarse quartz sand, gravels, and pebbles.

[e] This sample contains abundant natural gravels and pebbles that function as temper. No additional tempering materials were added.

Table B.4. Descriptive Information for Clay Samples: Firing Behavior.

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR001:									
1	-	≤950	5YR7/8 reddish yellow	-2.1	101.2	6.7	-	very soft	broke into three pieces during firing
FBR002:									
1	-	-	-	-	-	-	-	very soft	could not be fired
FBR003:									
1	-	≤950	5YR7/8 reddish yellow	0.0	138.5	5.1	-	soft	moderate warping; broke during handling
FBR004:									
1	-	≤950	5YR7/6 reddish yellow	-2.2	116.6	4.7	-	very soft	
FBR005:									
1	-	≤950	7.5YR8/2 pinkish white	0.0	107.8	9.0	-	moderately hard	became crumbly
FBR006:									
1	-	≤950	7.5YR8/2 pinkish white	2.1	81.3	12.1	-	moderately hard	
FBR007:									
1	-	≤950	5YR7/6 reddish yellow	0.0	99.3	9.6	-	moderately hard	
FBR008:									
1	-	≤950	5YR8/2 pinkish white	0.0	119.1	7.2	-	hard	
FBR009:									
1	-	≤950	7.5YR8/2 pinkish white	0.0	91.6	9.0	-	soft	
FBR010:									
1	-	≤950	7.5YR8/2 pinkish white	-2.1	143.3	3.6	-	very soft	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR011:									
1	-	893	10YR8/4 very pale brown	0.0	132.3	4.2	20.8	hard	
2	10% nonlocal grog[b]	893	10YR8/4 very pale brown	0.0	135.9	4.2	-	hard	minor cracking
3	10% local grog[c]	893	7.5YR8/6 reddish yellow	0.0	131.4	5.9	28.5	hard	
FBR012:									
1	-	893	2.5YR5/8 red	-2.2	127.7	4.9	27.3	hard	
2	10% nonlocal grog[b]	893	2.5YR5/8 red	0.0	121.5	4.6		hard	
3	15% local grog[c]	893	5YR6/8 reddish yellow	0.0	124.7	5.0	28.6	hard	moderate warping
FBR013:									
1	-	893	5YR7/8 reddish yellow	2.2	130.4	4.4	26.6	moderately hard	moderate warping
2	10% nonlocal grog[b]	893	5YR6/8 reddish yellow	0.0	128.7	4.0	-	soft	
3	15% local grog[c]	893	5YR7/8 reddish yellow	0.0	130.6	4.0	25.1	soft	
FBR014:									
1	-	893	5YR6/6 reddish yellow	0.0	117.0	6.3	32.4	moderately hard	
2	15% local grog[c]	893	5YR7/6 reddish yellow	0.0	118.0	6.3	32.1	soft	
FBR016:									
1	-	893	5YR6/6 reddish yellow	0.0	117.6	6.0	31.8	moderately hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
2	15% local grog[c]	893	5YR7/6 reddish yellow	0.0	118.1	6.0	30.6	soft	
FBR017:									
1	-	893	2.5YR5/6 red	0.0	97.3	5.2	38.6	hard	
2	10% local grog[c]	893	2.5YR5/8 red	0.0	103.8	6.0	36.6	hard	
3	10% Lower Little sand (FBR092)	≤950	2.5YR5/8 red	-2.3	114.1	5.0	35.1	hard	
FBR019:									
1	-	893	7.5YR7/6 reddish yellow	0.0	116.9	6.7	32.9	hard	minor cracking
2	10% unprovenienced sand A[d]	893	5YR7/4 pink	0.0	120.5	5.9	30.5	hard	minor cracking
3	20% unprovenienced sand A[d]	893	5YR7/6 reddish yellow	0.0	126.6	5.4	29.1	moderately hard	minor cracking
4	10% local grog[c]	893	5YR7/6 reddish yellow	0.0	124.7	6.6	31.3	hard	
FBR020:									
1	-	893	5YR6/6 reddish yellow	2.1	122.1	6.8	32.9	hard	minor cracking
2	10% local grog[c]	893	5YR7/6 reddish yellow	2.2	127.4	7.9	33.5	hard	
3	15% Jordan Lake sand	893	5YR7/6 reddish yellow	0.0	142.8	7.2	30.4	hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR021:									
1	-	893	10YR8/3 very pale brown	0.0	91.4	9.3	41.6	hard	minor cracking
2	15% Jordan Lake sand	893	7.5YR8/4 pink	0.0	99.1	8.6	39.4	hard	
3	10% local grog[c]	893	7.5YR8/4 pink	0.0	106.6	9.7	41.1	hard	
FBR022:									
1	-	893	5YR7/4 pink	2.2	113.7	7.0	33.8	hard	minor cracking
2	15% unprovenienced sand A[d]	893	5YR7/6 reddish yellow	2.1	134.6	6.7	28.6	hard	
3	15% local grog[c]	893	5YR7/6 reddish yellow	0.0	127.5	6.7	31.8	hard	moderate warping
FBR023:									
1	-	893	5YR6/6 reddish yellow	0.0	111.3	6.4	34.2	hard	
2	15% unprovenienced sand D[e]	893	2.5YR6/8 light red	0.0	111.9	6.0	29.8	hard	
3	10% local grog[c]	893	5YR6/8 reddish yellow	2.2	106.7	6.9	33.6	hard	
4	10% nonlocal grog[b]	≤950	5YR6/8 reddish yellow	0.0	112.9	7.5	32.6	hard	
FBR024:									
1	-	893	5YR6/6 reddish yellow	0.0	131.5	5.4	28.6	hard	minor cracking

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
2	15% unprovenienced sand D[e]	893	5YR6/6 reddish yellow	0.0	146.3	5.2	24.1	hard	
3	10% local grog[c]	893	5YR6/8 reddish yellow	0.0	133.9	5.8	27.6	hard	
FBR025:									
1	-	893	7.5YR7/4 pink	2.2	96.1	7.9	38.7	moderately hard	
2	10% local grog[c]	893	7.5YR8/4 pink	2.1	108.6	7.5	35.5	hard	
3	15% unprovenienced sand D[e]	893	7.5YR8/4 pink	0.0	119.9	7.4	32.9	soft	
FBR026:									
1	-	893	2.5YR6/8 light red	0.0	104.4	6.0	37.0	hard	minor cracking
2	15% unprovenienced sand D[e]	893	5YR7/8 reddish yellow	0.0	132.9	5.9	30.6	moderately hard	moderate warping; cracking
3	10% local grog[c]	893	2.5YR6/8 light red	0.0	107.5	6.3	34.7	hard	cracking
FBR027:									
1	-	893	5YR7/6 reddish yellow	0.0	104.5	8.3	37.8	hard	minor cracking
2	10% local grog[c]	893	5YR7/6 reddish yellow	0.0	107.1	8.5	36.1	hard	
3	15% unprovenienced sand A[d]	893	5YR7/6 reddish yellow	0.0	112.1	8.0	33.6	soft	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR028:									
1	-	893	5YR6/8 reddish yellow	0.0	136.9	3.7	26.0	moderately hard	minor cracking
2	20% Jordan Lake sand	893	5YR6/8 reddish yellow	0.0	146.4	3.0	24.3	soft	
FBR029:									
1	>30% natural[f]	893	5YR7/8 reddish yellow	0.0	160.9	3.1	21.7	soft	
FBR030:									
1	>20% natural[f]	893	5YR6/8 reddish yellow	0.0	119.9	5.7	31.5	hard	
2	5% Jordan Lake sand	893	5YR6/8 reddish yellow	0.0	129.9	5.0	30.0	moderately hard	
3	10% Jordan Lake sand	893	5YR7/8 reddish yellow	-2.2	142.6	4.5	26.6	soft	
FBR034:									
1	-	893	5YR6/6 reddish yellow	0.0	123.2	4.3	30.7	hard	
FRB035:									
1	-	893	2.5YR4/8 red	0.0	102.1	4.4	37.8	hard	
2	10% Jordan Lake sand	893	2.5YR4/8 red	0.0	111.8	3.6	33.6	hard	
3	15% Jordan Lake sand	893	2.5YR5/8 red	0.0	122.3	3.6	30.5	hard	minor cracking
4	10% Richmond County quartz (FBR087)	893	5YR6/8 reddish yellow	0.0	137.4	5.4	30.5	hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR036:									
1	-	893	7.5YR6/6 reddish yellow	0.0	142.5	2.2	23.6	hard	minor cracking
2	10% Richmond County quartz (FBR087)	893	7.5YR6/6 reddish yellow	0.0	160.3	3.3	21.0	hard	
3	15% Jordan Lake sand	893	7.5YR7/6 reddish yellow	0.0	161.5	3.4	20.8	hard	
FBR037:									
1	-	893	5YR6/6 reddish yellow	0.0	161.8	2.7	20.4	soft	minor cracking
FBR038:									
1	-	893	5YR6/6 reddish yellow	0.0	113.9	4.4	32.8	hard	
FBR039:									
1	-	893	7.5YR7/4 reddish yellow	0.0	124.3	3.6	29.5	hard	
2	5% Jordan Lake sand	893	10YR7/4 very pale brown	0.0	128.5	3.7	27.1	hard	
3	10% Jordan Lake sand	893	10YR7/4 very pale brown	0.0	137.4	3.3	25.5	hard	minor cracking
4	10% Richmond County quartz (FBR087)	893	7.5YR7/4 pink	0.0	141.7	5.0	26.8	hard	
FBR040:									
1	-	893	2.5YR5/8 red	0.0	113.7	4.5	32.8	hard	
2	10% Richmond County quartz (FBR087)	893	5YR6/8 reddish yellow	0.0	121.8	4.7	29.5	moderately hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
3	15% Jordan Lake sand	893	5YR6/8 reddish yellow	0.0	145.9	4.2	27.7	moderately hard	
4	10% weathered granitic rock (FBR088)	≤950	5YR6/8 reddish yellow	0.0	134.0	4.0	27.9	hard	
5	10% weathered granitic rock (FBR089)	≤950	5YR6/8 reddish yellow	0.0	115.9	4.5	30.9	hard	
6	10% weathered diabase (FBR090)	≤950	5YR5/8 yellowish red	0.0	121.1	4.3	30.5	hard	
7	10% fresh diabase (FBR091)	≤950	5YR5/8 yellowish red	0.0	119.0	4.5	30.6	hard	
8	10% Deep River quartz (FBR086)	≤950	5YR5/8 yellowish red	-2.3	118.5	4.4	30.9	hard	
FBR041:									
1	-	893	7.5YR6/6 reddish yellow	0.0	147.4	3.2	23.5	hard	minor cracking
2	10% Richmond County quartz (FBR087)	893	7.5YR7/6 reddish yellow	0.0	157.5	3.6	21.1	moderately hard	
FBR042:									
1	-	893	10YR7/6 yellow	-2.2	149.5	2.8	21.6	moderately hard	
FBR043:									
1	-	893	5YR6/6 reddish yellow	0.0	133.9	5.1	29.5	hard	moderate warping; minor cracking

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
2	10% Richmond County quartz (FBR087)	893	5YR6/6 reddish yellow	0.0	141.1	5.7	27.0	hard	moderate warping
3	15% Morgan Creek sand	893	5YR6/8 reddish yellow	0.0	137.0	6.0	27.5	hard	
FBR044:									
1	-	893	7.5YR7/6 reddish yellow	0.0	135.9	3.2	24.8	moderately hard	minor cracking
FBR045:									
1	-	893	7.5YR7/6 reddish yellow	-2.2	123.4	4.8	29.6	hard	minor cracking
FBR048:									
1	-	893	7.5YR7/6 reddish yellow	0.0	111.9	5.9	33.0	soft	moderate warping
FBR049:									
1	-	893	10YR7/4 very pale brown	-2.2	132.5	4.7	28.2	moderately hard	
2	10% Richmond County quartz (FBR087)	≤950	7.5YR8/4 pink	0.0	131.0	4.8	26.8	moderately hard	
3	10% weathered granitic rock (FBR089)	≤950	7.5YR7/4 pink	-2.1	132.5	4.9	27.1	moderately hard	
4	10% weathered diabase (FBR090)	≤950	7.5YR7/4 pink	0.0	130.7	5.0	26.8	moderately hard	
5	10% fresh diabase (FBR091)	≤950	7.5YR7/4 pink	2.1	130.5	5.0	28.1	moderately hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR051:									
1	-	≤950	7.5YR7/6 reddish yellow	0.0	105.3	7.6	36.5	soft	
FBR054:									
1	-	≤950	7.5YR7/6 reddish yellow	-2.2	135.3	4.7	27.7	soft	
FBR055:									
1	-	≤950	5YR7/8 reddish yellow	0.0	124.8	6.0	31.5	soft	
FBR058:									
1	-	≤950	7.5YR6/6 reddish yellow	0.0	141.0	4.6	23.6	soft	minor cracking
FBR059:									
1	-	≤950	7.5YR8/4 pink	-2.2	122.4	6.0	29.3	very soft	
FBR066:									
1	-	≤950	7.5YR8/2 pinkish white	0.0	81.4	11.3		soft	minor cracking
FBR067:									
1	-	≤950	5YR8/1 white	-2.3	50.8	15.9	58.3	very soft	
2	10% Lower Little sand (FBR092)	≤950	5YR8/1 white	4.4	61.4	14.2	54.8	very soft	
FBR069:									
1	-	≤950	5YR6/8 reddish yellow	-2.2	133.7	4.3	24.0	hard	
FBR070:									
1	-	≤950	2.5YR6/6 light red	0.0	113.6	6.0	26.7	hard	no warping or cracking

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR071:									
1	-	≤950	5YR6/8 reddish yellow	0.0	131.2	3.9	23.7	hard	
FBR072:									
1	-	≤950	2.5YR6/6 light red	0.0	147.5	4.0	21.1	hard	
FBR074:									
1	-	≤950	5YR6/8 reddish yellow	-2.2	143.3	4.0	22.1	hard	
FBR075:									
1	-	≤950	5YR6/8 reddish yellow	-2.2	138.4	3.5	22.2	moderately hard	
FBR077:									
1	-	≤950	2.5YR6/6 light red	-2.2	119.4	5.2	26.3	soft	
FBR080:									
1	-	≤950	7.5YR7/6 reddish yellow	2.2	126.4	6.0	29.7	soft	
FBR081:									
1	-	≤950	5YR6/8 reddish yellow	0.0	150.3	3.3	22.1	soft	moderate warping
FBR082:									
1	-	≤950	7.5YR7/6 reddish yellow	0.0	122.6	5.5	29.8	hard	
FBR083:									
1	-	≤950	5YR7/8 reddish yellow	0.0	149.2	4.4	24.1	hard	
FBR084:									
1	-	≤950	7.5YR7/6 reddish yellow	0.0	108.8	6.1	33.6	hard	

Table B.4. Descriptive Information for Clay Samples: Firing Behavior (continued).

Sample ID: Tile Number	Temper (Weight %)	Firing Temperature (°C)	Post-firing Munsell Color	Linear Firing Shrinkage (%)	Post-firing Weight (g)	Firing Weight Loss (%)	Total Weight Loss (%)[a]	Post-firing Hardness	Post-firing Observations
FBR085:									
1	-	≤950	5YR6/6 reddish yellow	0.0	117.8	5.0	31.6	hard	

[a] Total weight loss (%) = [(weight$_{wet}$ - weight$_{fired}$) / weight$_{wet}$] × 100, where weight$_{wet}$ is the weight of the tile prior to any drying and weight$_{fired}$ is the weight after firing.

[b] Nonlocal grog was made by crushing unprovenienced sherds.

[c] Local grog was made by crushing fired test tiles fashioned from the sample clay.

[d] Unprovenienced sand A is a well-sorted, subrounded coarse quartz sand with occasional dark mineral inclusions.

[e] Unprovenienced sand D is a mixture of subrounded and subangular coarse quartz sand, gravels, and pebbles.

[f] This sample contains abundant natural gravels and pebbles that function as temper. No additional tempering materials were added.

Table B.5. Descriptive Information for Clay Samples: Replication.

	Observations		
Sample ID	Conical Base	Addition of Coils	Annealing/ Paddling
FBR011	retains shape	retains shape	slumps
FBR012	retains shape	retains shape	retains shape
FBR014	cracks	retains shape	slumps
FBR017	breaks	-	-
FBR019	cracks	slumps	slumps
FBR020	retains shape	retains shape	slumps and cracks
FBR027	cracks	slumps	slumps
FBR035	retains shape	retains shape	retains shape
FBR040	retains shape	retains shape	retains shape
FBR085	retains shape	retains shape	retains shape

Table B.6. Clay Samples Submitted for NAA and XRD Analyses.

Sample ID	Region	Drainage
FBR002	Sandhills	Lower Little
FBR003	Sandhills	Lower Little
FBR004	Sandhills	Lower Little
FBR005	Sandhills	Lower Little
FBR006	Sandhills	Drowning Creek
FBR007	Sandhills	Lower Little
FBR008	Sandhills	Lower Little
FBR009	Sandhills	Lower Little
FBR010	Sandhills	Lower Little
FBR011	Coastal Plain	Cape Fear
FBR012	Coastal Plain	Cape Fear
FBR013	Coastal Plain	Cape Fear
FBR014	Coastal Plain	Cape Fear
FBR016	Coastal Plain	Cape Fear
FBR017	Sandhills	Lower Little
FBR019	Coastal Plain	Pee Dee
FBR020	Coastal Plain	Pee Dee
FBR021	Coastal Plain	Pee Dee
FBR023	Coastal Plain	Pee Dee
FBR027	Coastal Plain	Pee Dee
FBR029	Piedmont	Haw
FBR030	Piedmont	Haw
FBR035	Piedmont	Haw
FBR040	Piedmont	Haw
FBR041	Piedmont	Haw
FBR048	Piedmont	Yadkin
FBR049	Piedmont	Yadkin
FBR051	Piedmont	Yadkin
FBR054	Piedmont	Yadkin
FBR055	Piedmont	Yadkin
FBR058	Piedmont	Deep
FBR059	Sandhills	Lower Little
FBR067	Sandhills	Lower Little
FBR071	Piedmont	Deep
FBR074	Piedmont	Deep
FBR077	Piedmont	Deep
FBR080	Piedmont	Deep
FBR081	Coastal Plain	Waccamaw
FBR082	Coastal Plain	Waccamaw
FBR083	Coastal Plain	Waccamaw
FBR084	Coastal Plain	Waccamaw
FBR085	Coastal Plain	Waccamaw

Table B.7. Clay Samples Submitted for Petrographic Analysis.

Sample ID: Tile Number	Temper (Weight %)	Region	Drainage
FBR002:			
1	-	Sandhills	Lower Little
FBR003:			
1	-	Sandhills	Lower Little
FBR004:			
1	-	Sandhills	Lower Little
FBR005:			
1	-	Sandhills	Lower Little
FBR006:			
1	-	Sandhills	Drowning Creek
FBR007:			
1	-	Sandhills	Lower Little
FBR008:			
1	-	Sandhills	Lower Little
FBR009:			
1	-	Sandhills	Lower Little
FBR010:			
1	-	Sandhills	Lower Little
FBR011:			
1	-	Coastal Plain	Cape Fear
2	10% nonlocal grog[a]	Coastal Plain	Cape Fear
3	10% local grog[b]	Coastal Plain	Cape Fear
FBR012:			
1	-	Coastal Plain	Cape Fear
2	10% nonlocal grog[a]	Coastal Plain	Cape Fear
3	15% local grog[b]	Coastal Plain	Cape Fear
FBR013:			
1	-	Coastal Plain	Cape Fear
FBR014:			
1	-	Coastal Plain	Cape Fear
FBR016:			
1	-	Coastal Plain	Cape Fear
FBR017:			
1	-	Sandhills	Lower Little
3	10% Lower Little sand (FBR092)	Sandhills	Lower Little
FBR019:			
1	-	Coastal Plain	Pee Dee

Table B.7. Clay Samples Submitted for Petrographic Analysis (continued).

Sample ID: Tile Number	Temper (Weight %)	Region	Drainage
FBR020:			
1	-	Coastal Plain	Pee Dee
FBR021:			
1	-	Coastal Plain	Pee Dee
FBR023:			
1	-	Coastal Plain	Pee Dee
3	10% local grog[b]	Coastal Plain	Pee Dee
4	10% nonlocal grog[a]	Coastal Plain	Pee Dee
FBR027:			
1	-	Coastal Plain	Pee Dee
FBR029:			
1	>30% natural[c]	Piedmont	Haw
FBR030:			
1	>20% natural[c]	Piedmont	Haw
FRB035:			
1	-	Piedmont	Haw
FBR040:			
1	-	Piedmont	Haw
4	10% weathered granitic rock (FBR088)	Piedmont	Haw
5	10% weathered granitic rock (FBR089)	Piedmont	Haw
6	10% weathered metavolcanic rock (FBR090)	Piedmont	Haw
7	10% fresh diabase (FBR091)	Piedmont	Haw
8	10% Deep River quartz (FBR086)	Piedmont	Haw
FBR041:			
1	-	Piedmont	Haw
FBR048:			
1	-	Piedmont	Yadkin
FBR049:			
1	-	Piedmont	Yadkin

Table B.7. Clay Samples Submitted for Petrographic Analysis (continued).

Sample ID: Tile Number	Temper (Weight %)	Region	Drainage
2	10% Richmond County quartz (FBR087)	Piedmont	Yadkin
3	10% weathered granitic rock (FBR089)	Piedmont	Yadkin
4	10% weathered metavolcanic rock (FBR090)	Piedmont	Yadkin
5	10% fresh diabase (FBR091)	Piedmont	Yadkin
FBR051:			
1	-	Piedmont	Yadkin
FBR054:			
1	-	Piedmont	Yadkin
FBR055:			
1	-	Piedmont	Yadkin
FBR058:			
1	-	Piedmont	Deep
FBR059:			
1	-	Sandhills	Lower Little
FBR067:			
1	-	Sandhills	Lower Little
2	10% Lower Little sand (FBR092)	Sandhills	Lower Little
FBR071:			
1	-	Piedmont	Deep
FBR074:			
1	-	Piedmont	Deep
FBR077:			
1	-	Piedmont	Deep
FBR080:			
1	-	Piedmont	Deep
FBR081:			
1	-	Coastal Plain	Waccamaw
FBR082:			
1	-	Coastal Plain	Waccamaw
FBR083:			
1	-	Coastal Plain	Waccamaw

Table B.7. Clay Samples Submitted for Petrographic Analysis (continued).

Sample ID: Tile Number	Temper (Weight %)	Region	Drainage
FBR084:			
1	-	Coastal Plain	Waccamaw
FBR085:			
1	-	Coastal Plain	Waccamaw

[a] Nonlocal grog was made by crushing unprovenienced sherds.

[b] Local grog was made by crushing fired test tiles fashioned from the sample clay.

[c] This sample contains abundant natural gravels and pebbles that function as temper. No additional tempering materials were added.

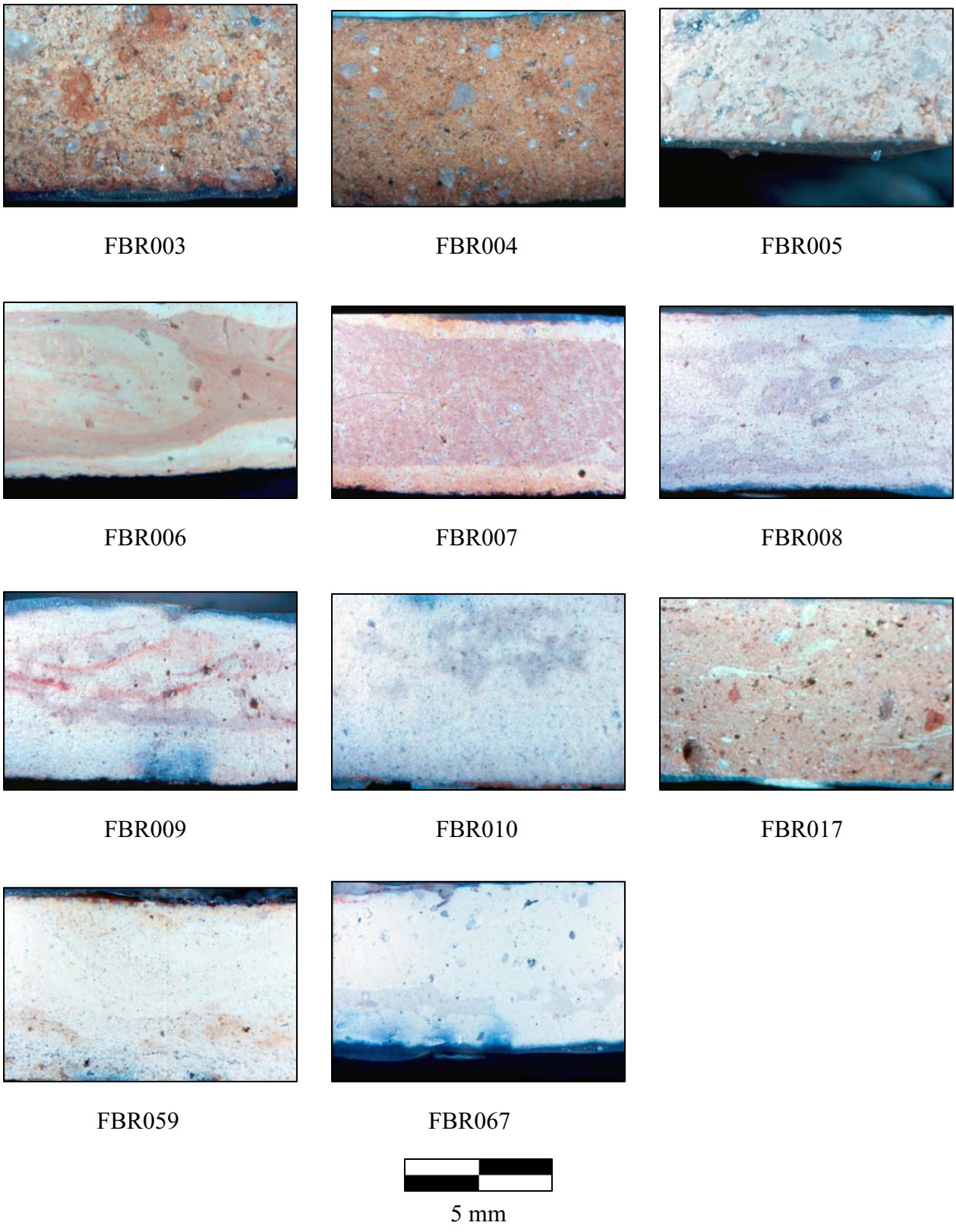


Figure B.1. Cross sections of untempered test tiles made from Sandhills clay samples.

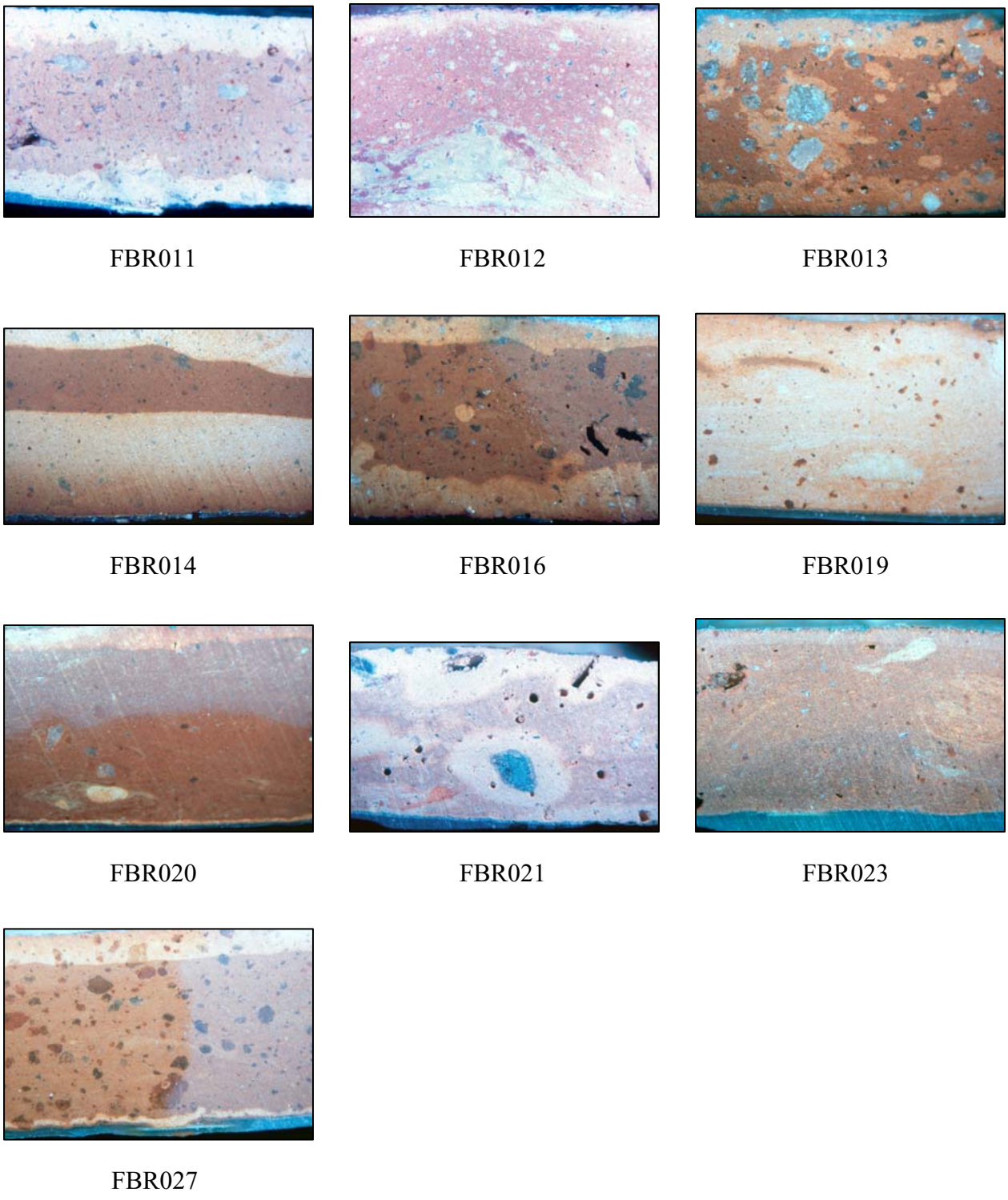


Figure B.2. Cross sections of untempered test tiles made from Coastal Plain clay samples from the Cape Fear (FBR011–FBR014, FBR016) and Pee Dee (FBR019–FBR021, FBR023, FBR027) drainages.

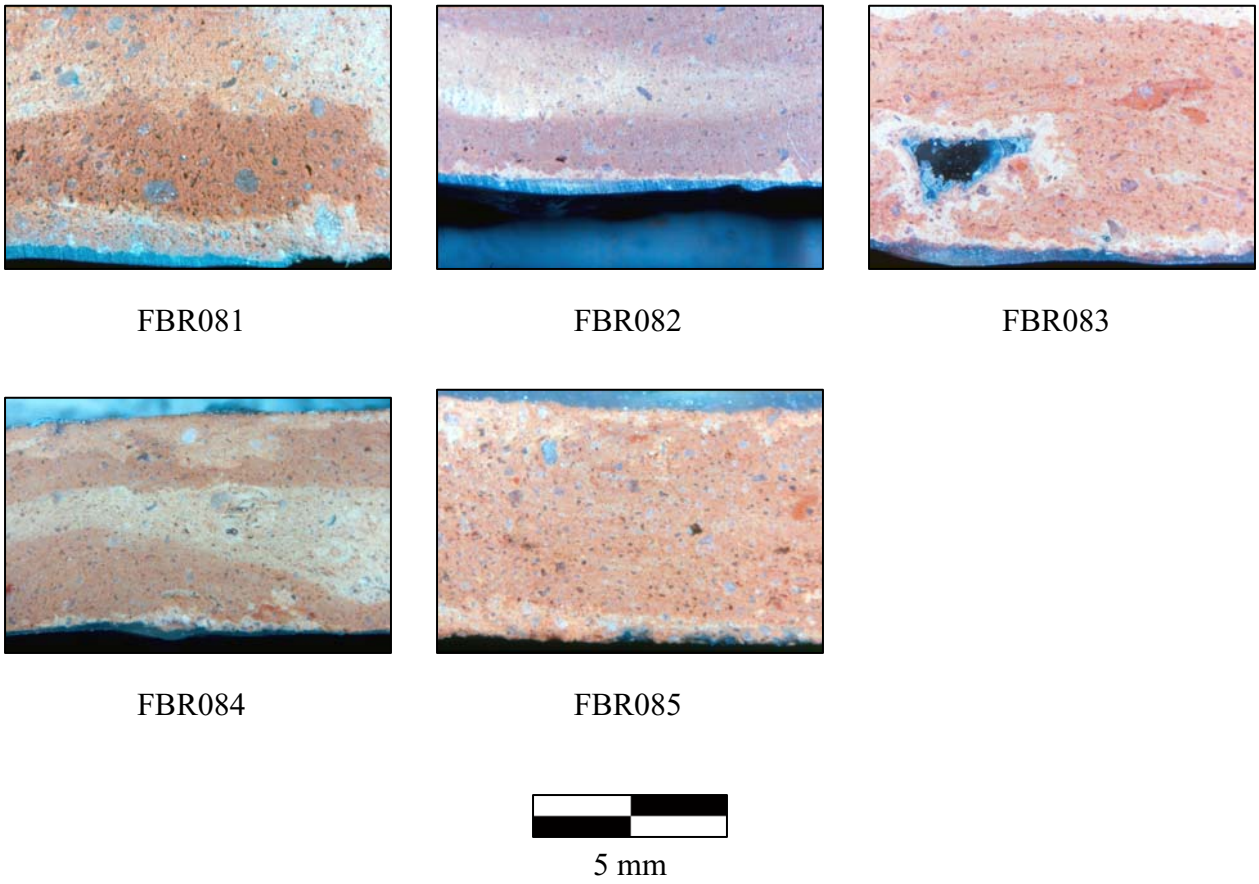
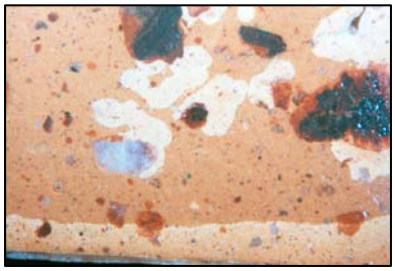
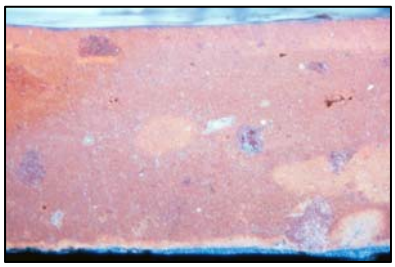


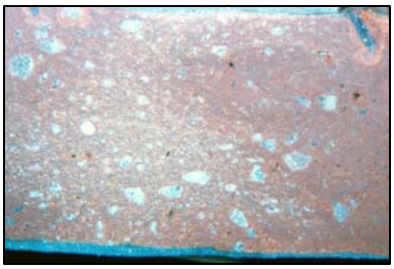
Figure B.3. Cross sections of untempered test tiles made from Coastal Plain clay samples from the Waccamaw drainage.



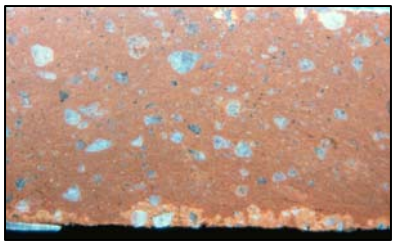
FBR029



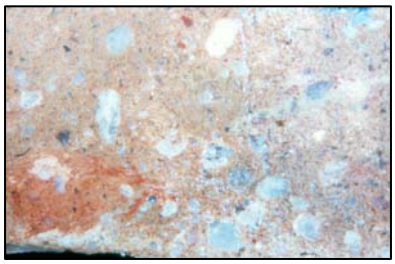
FBR030



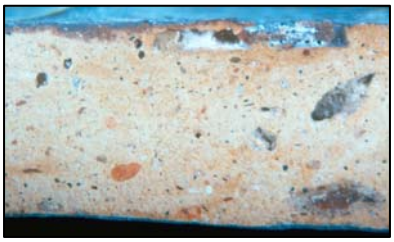
FBR035



FBR040

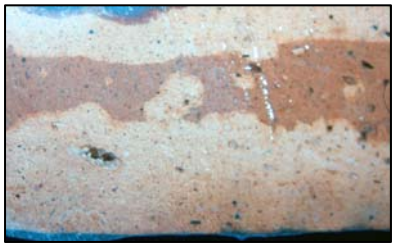


FBR041

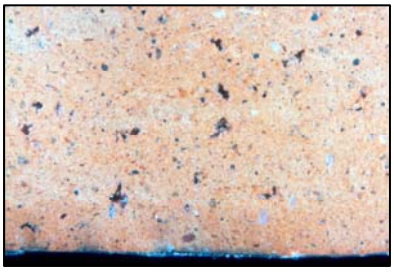


FBR048

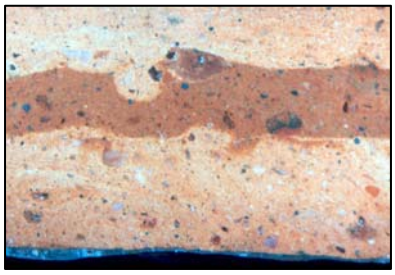
FBR049



FBR051



FBR054



FBR055

5 mm

Figure B.4. Cross sections of untempered test tiles made from Piedmont clay samples from the Haw (FBR029, FBR030, FBR035, FBR040, FBR041) and Yadkin (FBR048, FBR049, FBR051, FBR054, FBR055) drainages.

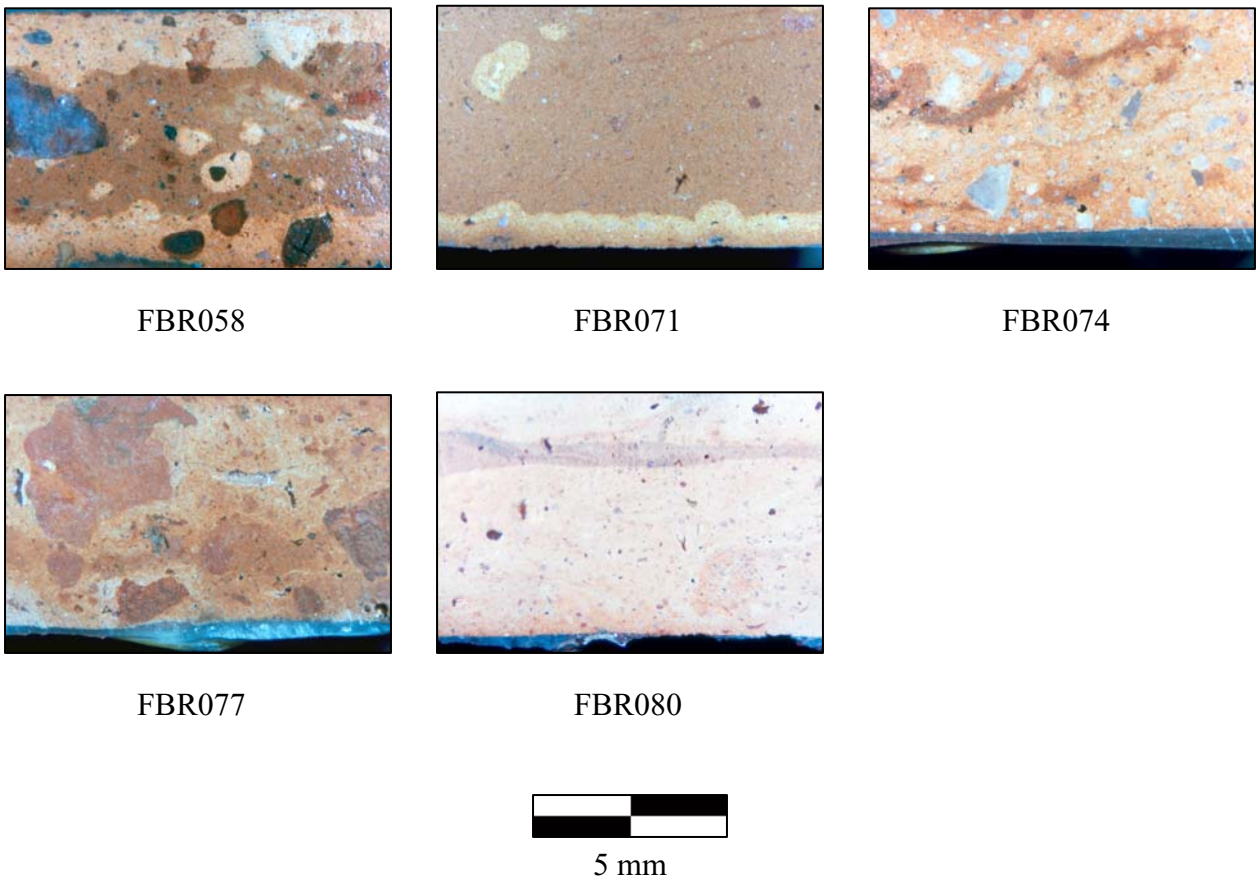
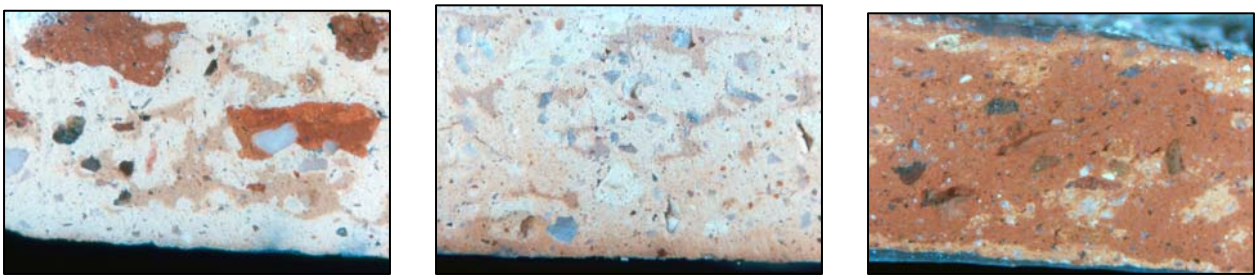
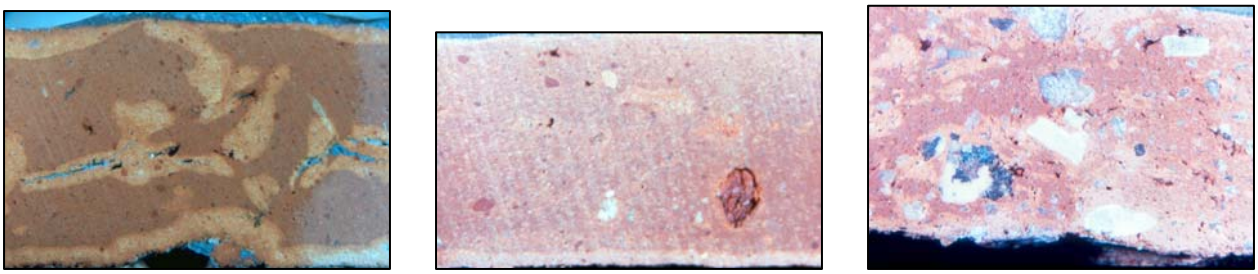


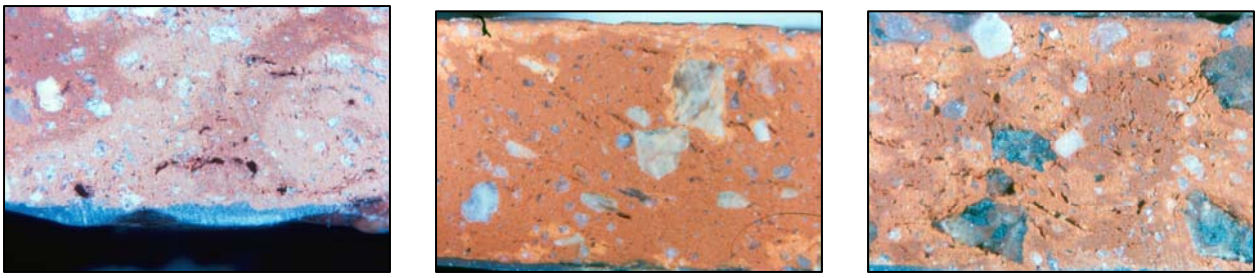
Figure B.5. Cross sections of untempered test tiles made from Piedmont clay samples from the Deep drainage.



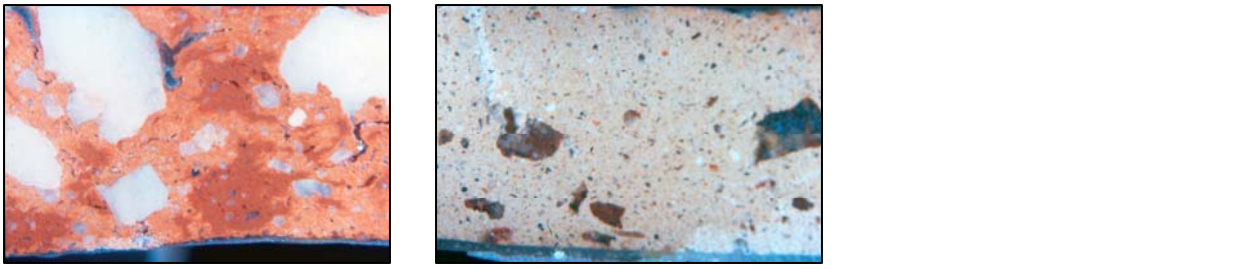
FBR011.2 FBR011.3 FBR012.2



FBR023.3 FBR023.4 FBR040.4



FBR040.5 FBR040.6 FBR040.7



FBR040.8 FBR049.5

5 mm

Figure B.6. Cross sections of tempered test tiles made from clay samples collected in the Cape Fear (FBR011.2, FBR011.3, FBR012.2), Pee Dee (FBR023.3, FBR023.4), Haw (FBR040.4–FBR040.8), and Yadkin (FBR049.5) drainages.