NATIONAL RECOVERY ADMINISTRATION

DIVISION OF REVIEW

E V I D E N C E S T U D Y

NO. 38

OF

THE STRUCTUAL CLAY PRODUCTS INDUSTRY

Prepared by

STERLING R. MARCH

September, 1935

PRELIMINARY DRAFT

(NOT FOR RELEASE: FOR USE IN DIVISION ONLY)

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THE EVIDENCE STUDY SERIES

The EVIDENCE STUDIES were originally planned as a means of gathering evidence bearing upon various legal issues which arose under the National Industrial Recovery Act.

These studies have value quite aside from the use for which they were originally intended. Accordingly, they are now made available for confidential use within the Division of Review, and for inclusion in Code Histories.

The full list of the Evidence Studies is as follows:

1. Automobile Manufacturing
2. Boot and Shoe
3. Bottled Soft Drink
4. Builders' Supplies
5. Chemical Mfg.
6. Cigar Mfg. Industry
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32. Retail Lumber
33. Retail Solid Fuel
34. Retail Trade
35. Rubber Mfg.
36. Rubber Tire Mfg.
37. Silk Textile
38. Structural Clay Products
39. Throwing
40. Trucking
41. Waste Materials
42. Wholesale Food
43. Wholesale Fresh Fruit & Vegetable
44. Wool Textile Industry

In addition to the studies brought to completion, certain materials have been assembled for other industries. These MATERIALS are included in the series and are also made available for confidential use within the Division of Review and for inclusion in Code Histories, as follows:

45. Automotive Parts & Equipment
46. Baking Industry
47. Canning Industry
48. Coat and Suit
49. Household Goods & Storage etc.
50. Motor Vehicle Retailing Trade
51. Retail Tire and Battery Trade
52. Shipbuilding
53. Wholesaling or Distributing Trade

L. C. MARSHALL
DIRECTOR, DIVISION OF REVIEW

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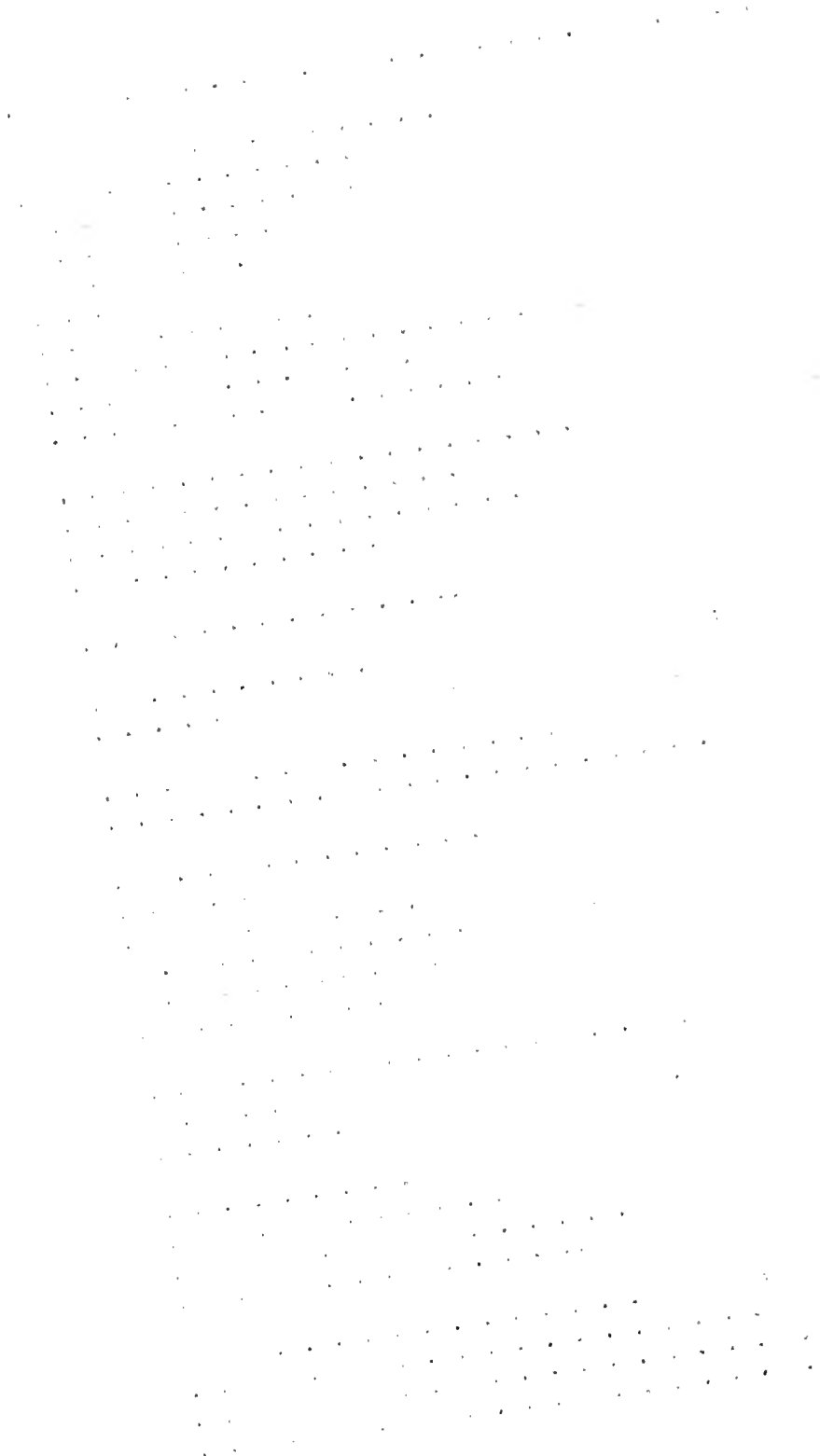

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STRUCTURAL CLAY PRODUCTS INDUSTRY

Foreword

The Structural Clay Products Industry, as defined by the Code, consists largely of the four branches -- common brick, face brick, paving brick and structural clay tile. In addition, the Code covers vitrified brick for purposes other than paving, glazed and enameled brick, hollow brick, and clay or shale granules. These products represent only a small portion of the total product of the Industry, however, and are largely produced in plants of the four main Industry branches. Since many plants produce more than one product, an effort has been made to avoid duplication in the statistics used in this report.

The data included in the following tables are derived chiefly from two sources, the Census of Manufactures and the Bureau of Labor Statistics. The Census data used are, in the main, the totals for the four branches of the Industry named above as taken from the Census classification, "The Clay Products Industries," and represent a coverage roughly comparable with Code coverage. Certain data used, however -- namely, that classified by major products -- give a coverage somewhat less inclusive than the Code. The usual limitation of Census of Manufactures data arising from the exclusion of establishments with an annual production of less than $5,000 does not apply in the case of this Industry, as these smaller establishments were covered by the Census reports.

Census data on total number of establishments in the four branches of the Industry, on number of employees, on amount of total payrolls, and on wage rates, represent those establishments whose <u>major</u> product was either common brick, paving brick, face brick, or hollow building tiles. State breakdowns of data along these lines were available only for 1935, and such of these data as pertain to labor have been used in Chapter II. Similar data are used in Table I which shows number of establishments by <u>major</u> products for the United States. In spite of a certain amount of duplication involved, in order to retain comparability of data for several years, the state breakdowns for the number of establishments cover <u>all</u> establishments producing the specified commodity, whether as major or minor product. The production tables -- whether giving the total for the United States or state breakdowns -- report the <u>total</u> production of specified commodities in <u>all</u> establishments.

Chapter I

NATURE OF THE INDUSTRY

Definition of the Industry

The Structural Clay Products Industry includes the manufacturers who produce in the United States and sell common brick, face brick (including glazed and enameled brick), structural clay tile (including glazed tile), paving brick, and clay or shale granules, and any other related groups that, with the approval of the Administrator, elected to operate under this Code.

The four branches of the Industry are: common brick, paving brick, face brick, and hollow building tile.

Number of Establishments

Table I, below, gives the number of establishments whose major product is one of the four types of product specified just above. Except for 1934[1/], figures are not available, without duplication, for the number of establishments which produce these commodities as minor products and yet are not included in one of the above groups. Consequently the totals given in this table are less inclusive than the Code coverage for the Industry.

TABLE I

Number of Establishments by Major Products [a/]

Product	1929	1933	1934
Total	1159[b/]	531	533
Common Brick	735	332	333
Paving Brick	34[b/]	25	27
Face Brick	244	96	90
Hollow Building Tile	146	78	83

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries", Table 6; 1933 and 1934 data from special Census tabulation for N.R.A., Research and Planning Division, 1933 and 1934.

a/ In addition to the number of establishments producing the above commodities as major products, there were 366 establishments in 1934 producing them as minor products, resulting in a total of 899 for the industry. Similar figures are not available for 1929 or 1933.

b/ Includes vitrified brick used for other purposes than paving.

The results of a partial study of some 500 companies made by the former Code Authority revealed that about one-half the total number of establishments make one product, about one-quarter make two products, a little less than one-quarter make three products, and one-fiftieth make four products; the remaining plants, for the most part, probably make only one product, and very few of them more than two products.

1/ See footnote a/ to Table I.

Number of Members of the Industry

No thorough check has ever been made of the number of companies who control two or more plants, but it is known that ten members of the Industry operate five or more plants each, and the former Code Authority estimated that the number of members in 1934 was equal to about thirty per cent of the number of plants.

Number of Establishments by States

The total number of establishments, by states, in each of the four branches of the Industry is given in Tables II, III, IV and V below. These figures include all of the establishments producing any of the commodity or commodities listed, whereas Table I includes only those establishments for which the product specified is the major product.

In addition to the four products for which data are given in the tables below, the Code covers establishments producing vitrified brick for purposes other than paving, glazed and enameled brick, hollow brick, and clay or shale granules. Undoubtedly there is considerable duplication between establishments producing these latter products and the products named in the following tables. For this reason the establishments producing the above-mentioned items have not been included in the data presented in these four tables, but the number of such establishments has been indicated in footnotes of the appropriate table except that no data are available on clay or shale granules.

Pennsylvania ranked first in the number of establishments producing common brick and of those producing face brick in each of the years 1929, 1932 and 1934. Ohio was the leading state in the number of establishments producing building tile. As for paving brick, Pennsylvania ranked first in 1929 with 14 establishments, while in 1932 and 1934, Ohio led with 20 and 17 establishments respectively.

The former Code Authority has estimated that over one-half of the total number of all plants in the United States, for all branches of the Industry, are located in four states: 20.7 per cent in Ohio; 17.0 per cent in Pennsylvania; 10.4 per cent in New Jersey, and 6.6 per cent in Illinois.

TABLE II

Number of Establishments Producing Common Brick by Principal States a/

State	1929	1932	1934
U. S. Total	1074	691	693
Alabama	33	16	18
Arkansas	10	5	6
California	55	37	29
Colorado	25	22	19
Connecticut	20	12	16
Florida	8	3	7
Georgia	18	8	9
Illinois	60	54	44
Indiana	27	21	18
Iowa	35	24	22

(Continued on following page)

TABLE II (Cont'd)

Kansas	17	13	12
Kentucky	22	12	16
Louisiana	17	7	7
Maine	17	10	10
Massachusetts	22	16	13
Michigan	13	11	14
Minnesota	13	10	11
Mississippi	21	6	6
Missouri	21	15	15
Nebraska	15	4	4
New Hampshire	9	11	10
New Jersey	36	15	15
New York	60	38	32
North Carolina	59	22	23
Ohio	59	45	40
Oklahoma	17	13	13
Pennsylvania	104	80	74
South Carolina	19	10	10
Tennessee	31	15	21
Texas	37	28	29
Virginia	42	24	27
Washington	19	10	13
West Virginia	14	6	6
Wisconsin	27	19	18
Other States	96	49	66

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries," Table 5; 1932 and 1934 data from Census reports on The Clay Products Industries, 1932, and 1934, Table 3.

a/ It should be noted that the Code also covers the production of hollow brick for which no separate table is presented. Since it and common brick are often produced in the same plants, establishments listed as producing hollow brick have not been included in this table, in order to avoid duplication. Such plants totaled 41 in 1929, 28 in 1932, 37 in 1933, and 25 in 1934.

TABLE III

Number of Establishments Producing Face Brick by Principal States a/

State	1929	1932	1934
U. S. Total	457	375	348
Alabama	12	6	8
Arkansas	7	5	6
California	17	13	17
Colorado	13	11	12
Georgia	7	6	4
Illinois	27	26	21

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(Continued on following page)

TABLE III (Cont'd)

Indiana	22	18	14
Iowa	21	19	18
Kansas	14	11	13
Kentucky	6	4	6
Michigan	5	3	3
Minnesota	3	2	2
Mississippi	9	5	3
Missouri	13	12	9
North Carolina	9	6	4
Ohio	50	45	42
Oklahoma	16	13	12
Pennsylvania	84	72	59
South Carolina	4	5	2
Tennessee	10	8	11
Texas	17	16	14
Virginia	10	12	10
Washington	9	9	9
West Virginia	10	7	6
Wisconsin	7	5	3
Other States	57	36	40

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries," Table 5; 1932 and 1934 data from Census reports on The Clay Products Industries, 1932, and 1934, Table 3.

a/ It should be noted that the Code also covers the production of enameled brick for which no separate table is presented. Since it and face brick are often produced in the same plants, establishments listed as producing enameled brick have not been included in this table, in order to avoid duplication. Such plants totaled 7 in 1929, 5 in 1932, 15 in 1933, and 10 in 1934.

TABLE IV

Number of Establishments Producing Vitrified Paving Brick by Principal States a/

State	1929	1932	1934
U. S. Total	77	75	72
Ohio	13	20	17
Pennsylvania	14	9	10
Illinois	8	11	9
Indiana	5	2	6
Iowa	3	4	3
Kansas	8	7	7
Texas	2	3	2
New York	2	1	1
Other States	22	18	17

(Continued on following page)

TABLE IV (Cont'd)

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries," Table 5; 1932 and 1934 data from Census reports on The Clay Products Industries, 1932, and 1934, Table 3.

a/ It should be noted that the Code also covers the production of vitrified paving brick for other purposes, for which no separate table is presented. Since it and vitrified paving brick are often produced in the same plants, establishments listed as producing vitrified paving brick for other purposes have not been included in this table in order to avoid duplication. Such plants totaled 41 in 1929, 34 in 1932, 39 in 1933, and 34 in 1934.

TABLE V

Number of Establishments Producing Hollow Building Tile by Principal States[a/]

State	1929	1932	1934
U. S. Total	419	347	327
California	21	17	18
Colorado	8	10	10
Georgia	6	4	4
Illinois	32	37	27
Indiana	25	19	19
Iowa	36	28	27
Kansas	16	14	15
Kentucky	7	5	7
Missouri	15	10	10
New Jersey	14	12	8
New York	5	4	4
Ohio	63	53	47
Pennsylvania	31	31	22
Texas	14	14	14
Washington	15	11	7
Other States	115	78	88

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries," Table 5; 1932 and 1934 data from Census reports on The Clay Products Industries, 1932, and 1934, Table 3.

a/ To give Code coverage, only two of the three groups included in this category by the Census have been used. These are (1) partition, load-bearing, furring, and book tile, and (2) floor-arch, silo, and corn-crib tile, radial chimney blocks, and fire proofing tile. The third group, conduit tile, was not included under the Code.

Capital investment and Productive capacity

The capital invested in the Structural Clay Products Industry, according to a study made some years ago by the Brick and Clay Record (the leading trade journal in the Industry), was $275,000,000. Many hundreds of plants have failed and in many cases the same plant has been involved in repeated

failures -- new capital having been invested in the business with each refinancing. No marked change in capacity has occurred since the above estimate was made. The former Code Authority estimated the productive capacity of the Industry at 45,000,000 tons annually. The invested capital would therefore have been about $6.00 per ton, on a yearly average basis. The basis upon which the capital investment was calculated is not known.

Value and Volume of Production

The total value of products and volume of production for the Industry are given in Table VI, below, for the years 1929, 1931, 1933 and 1934. This table shows a tremendous decline in volume and value from 1929 through 1933, with a small increase in both volume and value in 1934, as compared with 1933. These figures are taken from the Census of Manufactures of the Department of Commerce--the volume of production is actual production and the value is selling value.

Failures

Dun and Bradstreet report two failures for 1934 in the Structural Clay Products Industry.1/ Data for other years are not available.

TABLE VI

Total Value and Volume of Production in the Industry as Defined by the Code by Kind of Product

Kind of Product	Volume of Production (In millions) a/				Value of Production (In thousands)			
	1929	1931	1933	1934	1929	1931	1933	1934
Total	--	--	--	--	$125,934	$49,275	$16,794	$22,598
Common Brick	5,505	2,315	1,020	1,099	58,733	21,652	8,816	11,419
Vitrified Brick For Paving	274	179	54	100	5,971	3,845	1,106	2,232
Vitrified Brick For Other Purposes b/	93	29	9	14	1,533	422	118	202
Face Brick	2,139	903	270	305	36,120	13,271	3,807	4,749
Enameled Brick	17	9	4	4	1,259	484	172	163
Hollow Brick	26	6	4	6	345	58	80	85
Hollow Building Tile (excluding conduit tile)	3,660a/	1,806a/	596a/	672a/	21,973	9,543	2,695	3,748

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries;" the remaining data from Census reports on The Clay Product Industries, 1931, 1933, and 1934.

a/ Hollow building tile is expressed in thousands of tons.

b/ Vitrified brick for purposes other than paving was not specifically mentioned in the Code definition but since it is produced in the same establishments that produce paving brick it was considered as under the Code in the administration thereof.

1/ Current Analysis of Insolvency Trends (February 28, 1935).

Continuity of Production

This Industry has not operated continuously in recent years because its volume is dependent upon activity in the Construction Industry. Table VII, below, gives a picture of operating activity in the Industry from which to judge the continuity of employment and production throughout the year 1933. The table emphasizes the fact that in this year the vast majority of the plants worked fewer than 200 days per year, and that more than 80 per cent of the total production came from such plants.

TABLE VII

Number of Plants and Value of Product for Establishments in the Four Main Divisions of the Industry, Classified by Days Operated, 1933 a/

Number of Days of Operation	Number of Establishments	Value of Product (000's)	Per Cent of Total Value
Less than 100 days			
Total	322	$6,701	41.0
Common brick	212	4,003	46.0
Face brick	55	1,254	35.0
Paving brick	15	689	51.3
Hollow building tile	40	755	27.9
100 to 199 days			
Total	157	6,571	40.2
Common brick	86	2,890	33.2
Face brick	31	1,561	43.5
Paving brick	9	653	48.7
Hollow building tile	31	1,467	54.3
200 to 299 days			
Total	36	2,246	13.8
Common brick	22	1,103	12.7
Face brick	7	663	18.5
Paving brick	0	0	0
Hollow building tile	7	480	17.8
300 or more days			
Total	10	635	3.9
Common brick	9	635	7.3
Face brick	1	b/	b/
Paving brick	0	0	0
Hollow building tile	0	0	0
Not reported			
Total	6	181	1.1
Common brick	3	72	0.8
Face brick	2	109	3.0
Paving brick	1	c/	c/
Hollow building tile	0	0	0

(Continued on the following page)

TABLE VII (Cont'd)

Source: Special Census report to NRA, Research and Planning Division, 1933.

a/ Data are for establishments which produce the commodities listed as major products.

b/ Included with "Not reported."

c/ Included with "Less than 100 days."

Competing Products

All of the products of the Industry are used in the Construction Industry. Competing products are:

Concrete block and other concrete products
Cinder concrete block and cinder brick
Plain and reinforced concrete
Terra cotta
Artificial stone
Cut building stone
Cement
Lumber
Asphalt
Stone paving block

Chapter II

LABOR STATISTICS

Employment and Payrolls

Table VIII, below, gives the average number of employees and total amount of payrolls for establishments whose major product was either common brick, face brick, paving brick, or hollow tile. Between 1929 and 1933 the number of employees declined 77 per cent and the amount of total annual payrolls declined almost 90 per cent. Tables IX, X, XI, and XII, below, show the average number of employees, total annual payrolls, and average weekly wages by states for 1933 for each of the four main branches of the Industry.

TABLE VIII

Average Number of Employees and Total Annual Payrolls
In the Four Main Divisions of the Industry a/

	1929	1931	1933
Number of employees	46,179	25,298	10,620
Total annual payroll (In thousands)	51,499	21,372	5,598

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries;" 1931 data from Census report on The Clay Products Industries, 1931; 1933 data from special Census tabulation for NRA, Research and Planning Division, 1933.

a/ Data are for those establishments producing as major products either common brick, face brick, vitrified brick for paving purposes, and hollow building tile.

TABLE IX

Employment, Payrolls, and Average Weekly Wages in Establishments whose Major Product was Common Brick, by Principal Producing States, 1933.

State	Employees a/	Payrolls b/ (In thousands)	Average Weekly Wage c/
U. S. Total	5,963	$2,951	$9.52
Alabama	220	69	6.04
Arkansas	62	19	5.88
California	244	144	11.35
Colorado	44	30	13.12
Connecticut	173	101	11.23
Florida	65	18	5.33
Georgia	411	119	5.58
Illinois	192	153	13.33
Indiana	70	37	10.17
Iowa	39	21	10.35
Kansas	32	12	7.2.
Kentucky	134	62	6.4[illegible]
Louisiana	74	21	5.46
Maine	33	24	13.98
Maryland	192	103	10.31
Massachusetts	106	76	13.79
Michigan	33	17	9.90
Minnesota	42	23	10.54
Mississippi	152	49	6.19
Missouri	71	48	13.00
Nebraska	30	17	10.90
New Hampshire	55	40	13.98
New Jersey	427	209	9.40
New York	470	306	12.52
North Carolina	394	129	6.29
Ohio	163	102	12.04
Oklahoma	56	29	9.96
Pennsylvania	547	332	11.67
South Carolina	212	55	4.98
Tennessee	267	119	8.58
Texas	130	50	7.40
Virginia	504	246	9.38
Washington	25	18	13.85
West Virginia	38	20	10.12
Wisconsin	65	32	9.46
Other States	141	101	13.77

Source: Bureau of Census, Special Report to NRA, Research and Planning Division, 1933. Data cover 332 establishments.

a/ Employees include all wage earners.
b/ Wages include wages paid to wage earners listed.
c/ Computed by NRA, Research and Planning Division - average weekly payroll divided by number of employees.

TABLE X

Employment, Payrolls and Average Weekly Wages in Establishments whose Major Product was Face Brick, by Principal States, 1933.

State	Employees a/	Payrolls b/ (In thousands)	Average Weekly c/ Wage
U. S. Total	2,242	$1,290	$11.06
Alabama, Arkansas Colorado and Texas	234	97	7.98
Indiana and Illinois	262	142	10.42
Iowa, Kansas, Michigan Minnesota, Missouri, South Dakota, and Wisconsin	199	140	13.54
New Jersey, Maryland Rhode Island, and New York	162	129	15.31
Ohio	481	255	10.19
Pennsylvania	623	387	11.94
Kentucky, Tennessee, Virginia, and West Virginia	182	73	8.04
Other States	99	64	1.17

Source: Bureau of Census, Special Report to NRA, Research and Planning Division, 1933. Data cover 96 establishments.

a/ Employees include all wage earners.
b/ Wages include wages paid to wage earners listed.
c/ Computed by NRA, Research and Planning Division, - Average weekly payroll divided by number of employees.

TABLE XI

Employment, Payrolls, and Average Weekly Wages in Establishments whose Major Product was Paving Brick by Principal Producing States, 1933.

State	Employees a/	Payrolls b/ (In thousands)	Average Weekly c/ Wage
U. S. Total	790	$469	$11.42
Illinois, Indiana, Iowa and Kansas	242	147	11.67
N. Y. Pa. & W. Va.	82	46	10.79
Ohio	322	221	13.19
Ga. Okla. & Texas	144	55	7.35

Source: Bureau of Census, Special Report to NRA, Research and Planning Division, 1933. Data covers 25 establishments.

a/ Employees include all wage earners.
b/ Wages include wages paid to wage earners listed.
c/ Computed by NRA, Research and Planning Division, - Average weekly payroll divided by average number of employees.

TABLE XII

Employment, Payrolls, and Average Weekly Wage in Establishments Whose Major Product was Hollow Building Tile, by Principal Producing States, 1933.

State	Employees a/	Payrolls b/ (In thousands)	Average Weekly c/ Wage
U. S. Total	1,626	$883	$10.50
Illinois	71	42	11.38
Indiana	91	72	15.21
Iowa	214	129	11.60
Ohio	357	173	9.33
Pennsylvania	159	82	9.92
Alabama and North Carolina	38	16	8.10
Montana, California, & Oregon	63	52	15.87
Maryland & W. Virginia	107	62	11.13
Kansas and Missouri	53	25	9.08
Minnesota, Nebraska & North Dakota	66	44	12.83
New York and New Jersey	140	85	11.67
New Mexico and Colorado	50	21	8.08
Arkansas, Louisiana, Okla. & Texas	217	85	7.54

Source: Bureau of Census, Special Report to NRA, Research and Planning Division, 1933. Data cover 78 establishments.

a/ Employees include all wage earners.
b/ Wages include wages paid to wage earners listed.
c/ Computed by NRA, Research and Planning Division, - Average weekly payroll divided by average number of employees

Seasonal Variation

The Industry in many parts of the country is largely seasonal, particularly in the North. The digging of clay and quarrying of shale are difficult in the rainy season and also, in the North, in the winter season. These interruptions, as well as the low volume of sales and the inability of the smaller plants to finance heavy inventories, have tended toward intermittent operations of plants. The extent to which operations are periodic has already been indicated in Table VII, above.

Table XIII, below, gives monthly employment in the Industry as a whole during 1933. It will be seen that employment in February, the low month, was not much more than a third of that reported for August, which was the high month. Census data on monthly payrolls are not available.

TABLE XIII

Seasonality of Employment in the Four Main Divisions of the Industry 1933a/

Week Ending Nearest the 15th	Number of Employees
January	6,315
February	5,984
March	6,856
April	8,199
May	10,399
June	12,430
July	14,853
August	15,406
September	13,851
October	12,719
November	11,077
December	9,353
Average	10,620

Source: Bureau of Census, special report to NRA, Research and Planning Division, 1933.

a/ Data cover those establishments whose major product was either common brick, face brick, paving brick, or hollow building tile.

Chart I shows the seasonality of employment hours, and wages for the Industry as defined by the Code. Monthly data for 1933 and 1934 on employment, earnings, and hours upon which the chart is based are presented in Table XXIII, below.

Trend of Average Weekly Wages

For Comparisons of average weekly wages, Table XIV, below, has been prepared from Census data for the years 1929, 1931, and 1933, and from Bureau of Labor Statistics data for 1934. These figures show the same general trend as volume of production. 1/ There was a decided decline from 1929 through 1933, but a fairly substantial rise in 1934 as compared with 1933. This increase in weekly wages amounted to 30 per cent, whereas total value of production increased 35 per cent.

TABLE XIV

Average Weekly Earnings in the Four Main Divisions of the Industry a/

Year	Average Weekly Earnings
1929	$21.45
1931	16.25
1933	10.14
1934	13.00 b/

Source: 1929, 1931, and 1933 figures computed from Table VIII, above; 1934 from Bureau of Labor Statistics, as explained in the source and footnote c/ of Table XXIII below.

a/ Data cover those establishments whose major product was either common brick, face brick, paving brick, or hollow building tile.

b/ Refers to the industry as defined by the Code. See Table XIII below.

Percentage Which Cost of Labor is of Value of Product

In spite of modernization of plants and the use of improved machinery, labor continues to be the chief factor in the cost of the finished product. It has been claimed that labor represents a larger proportion of the total cost of structural clay products than it does of any competing material. 2/ The per cent that wages constitute of the total value of the product is shown in Table XV, below, for the years 1929, 1931, and 1933.

The difference in the cost of production on a spread of 10 cents per hour in the basic wage scale will, in the average size plant, (50,000 to 60,000 bricks per day, or its equivalent in tonnage) amount to 50 cents per thousand brick. 2/

1/ See Table VI, above.

2/ Public Hearing on the Structural Clay Industry, November 8, 1933, page 17.

Chapter III

MATERIALS: RAW AND SEMI-PROCESSED

Principal Materials Used in the Industry

The chief raw materials used in the manufacture of structural clay products are shale, surface clay, and fire clay. While at least one of these raw materials is found in each state, certain higher grades of raw material which are used in producing the better types of products are found only in certain areas. Ohio and Pennsylvania are noted for their fire clay deposits. Of necessity, plants are built where raw materials are found and this situation makes for long hauls to market in many instances -- especially for certain types of products, such as face brick and structural clay tile.

Cost of Materials, Fuel, and Purchased Electric Energy.

Table XV below, gives the total value of product, total labor cost, and total cost of materials for 1929, 1931, 1933, and 1934, and shows the relation of each of the latter items to the total value of the product.

TABLE XV

Relation of Total Labor and Total Materials Cost to Total Value of Product in the Four Main Divisions of the Industry a/

Year	Total Value of Product (000's)	Wages Paid		Cost of Materials, Fuel and Purchased Electric Energy	
		Amount (000's)	Per Cent of Total	Amount (000's)	Per Cent of Total
1929	$120,659	$51,499	42.7	$35,587	29.5
1931	47,542	21,372	45.0	13,970 b/	29.4
1933	16,134	5,598	34.7	4,550	28.2

Source: 1929 data from Census of Manufactures, 1929, "The Clay Product Industries;" 1931 data from Census report on The Clay Products Industries, 1931; and 1933 data from special Census report to NRA, Research and Planning Division, 1933.

a/ These data include those establishments whose major product was either common brick, face brick, paving brick, or hollow building tile.

b/ Cost of Materials for 1931 estimated by NRA, Research and Planning Division.

Fuel cost is an important factor in the manufacture of the Industry's products. In areas such as New England, New York, and certain southeastern states, as well as western states, coal must be shipped on comparatively long hauls. Even in states that produce lower grades of coal, it is ofter necessary to ship in nigher grades of coal for use in certain burnings.

Table XVI below, gives the value of purchases of materials, fuel, and electric energy for the years 1929 and 1933 for the four branches of the Industry. Establishments are classified according to major products.

TABLE XVI

Cost of Materials, Fuel, and Purchased Electric Energy, by Main Divisions of the Industry 1929 and 1933.
(In thousands)

Division of the Industry	1929	1933
Total	$35,587 a/	$4,559
Common Brick	15,170	2,464
Face Brick	10,756	999
Paving Brick	2,239 a/	348
Hollow Building Tile	7,422	739

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries;" 1933 data from special Census report to NRA, Research and Planning Division, 1933.

a/ Includes vitrified brick used for purposes other than paving.

Equipment

The equipment used in plant operations is largely of midwestern manufacture, but belt conveyors, one of the heavy supply cost items, are mostly manufactured in the south and in New England.

Chapter IV

PRODUCTION AND DISTRIBUTION

Value and Volume of Products by States

Although structural clay products of one or more branches of the Industry are manufactured in each state, there is a considerable movement of these products across state lines. Face brick and structural clay tile in particular, and common brick, and paving brick to a somewhat lesser extent, are involved in interstate movement.

Tables XVII, XVIII, XIX and XX below, show the total volume and value of production for the major producing states for the four branches of the Industry.

TABLE XVII

Volume and Value of Common Brick Produced in Principal States

State	1929		1931		1934	
	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)
U.S. Total	5,505	$58,732	2,315	$21,652	1,099	$11,419
Alabama	143	1,301	59	421	41	338
California	287	2,967	95	881	20	180
Connecticut	146	1,763	86	956	34	360
Georgia	143	1,146	48	281	40	302
Illinois	836	7,805	143	1,297	75	702
Indiana	112	1,083	21	190	13	140
Kentucky	47	515	26	226	23	256
Maryland	97	1,285	43	496	17	225
Massachusetts	93	1,435	51	656	31	373
Michigan	153	1,764	28	301	26	250
Mississippi	96	941	26	202	13	116
Missouri	104	1,343	43	427	19	207
New Jersey	248	2,848	135	1,508	53	626
New York	764	7,515	601	4,970	156	1519
North Carolina	217	2,010	95	652	60	566
Ohio	260	2,639	87	891	29	310
Pennsylvania	418	5,584	162	1,815	93	1088
Tennessee	99	1,074	29	284	36	353
Texas	182	1,812	65	522	39	365
Virginia	161	1,971	66	792	62	665
All Others	899	9,971	406	3,974	219	2,478

Source: 1929 data from Census of Manufactures, 1929. "Clay Products Industries," Table 5; 1931 and 1934 data from Census Report for Clay Products Industries, 1931 and 1934.

TABLE XVIII

Volume and Value of Paving Brick
Produced in Principal States

State	1929a/		1931		1934	
	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)
U.S. Total	274	$5,971	115	$2,411	100	$2,232
Illinois	21	495	25	500	17	321
Indiana	4	78	a/	a/	6	113
Kansas	14	291	a/	a/	a/	a/
Ohio	116	2,505	69	1,509	44	1,074
Pennsylvania	35	773	5	98	13	326
All Others	84	1,829	16	306	20	399

Source: 1929 data from Census of Manufacturers, 1929, "The Clay Products Industries", Table 5; 1931 and 1934 data from Census reports on The Clay Products Industries, 1931 and 1934, Table 3.

a/ Not available separately but included in "All Others".

TABLE XIX

Volume and Value of Hollow Tile Produced in Principal States

State	1929		1931		1934	
	Volume (000 tons)	Value (000's)	Volume (000 tons)	Value (000's)	Volume (000 tons)	Value (000's)
U.S. Total	3,318	$19,835	1,646	$8,774	636	$3,501
California	81	674	52	385	17	136
Illinois	330	1,400	101	385	55	233
Indiana	252	1,675	86	776	26	200
Iowa	234	1,597	113	695	64	400
Kansas	106	533	25	107	10	48
Kentucky	16	103	9	48	11	37
Missouri	40	201	26	135	16	85
New Jersey	434	3,496	248	1,696	a/	a/
New York	80	466	45	211	15	74
Ohio	745	3,443	399	1,639	73	401
Pennsylvania	253	1,433	110	448	53	255
Texas	109	603	53	387	39	196
All Others	708	4,151	379	1,963	257	1,436

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries", Table 5; 1931 and 1934 data from Census reports on The Clay Products Industries 1931, and 1934, Table 3.

a/: Not available separately but included in "All Others".

TABLE XXI

Volume and Value of Face Brick Produced
in Principal States

State	1929		1931		1934	
	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)	Volume (000,000's)	Value (000's)
U.S. Total	2,139	$36,130	905	$13,271	305	$4,749
Illinois	220	3,407	81	1,145	28	415
Indiana	130	2,269	50	721	15	264
Missouri	56	1,133	24	365	7	101
Ohio	501	7,402	218	3,280	59	977
Pennsylvania	466	8,013	211	3,094	65	955
Texas	96	1,709	43	541	16	228
All Others	670	12,187	276	4,125	115	1,809

Source: 1929 data from Census of Manufactures, 1929, "The Clay Products Industries", Table 5; 1931 and 1934 data from Census reports on The Clay Products Industries, 1931, and 1934, Table 3.

Interstate Movement of Goods

Movements of structural clay products in interstate commerce are demonstrated by Table XXI, below, which shows production and consumption for 1929 of all of the brick products of the Industry by states.1/ Pennsylvania, Ohio, and Illinois, the leading producing states, accounted for about 38 per cent of total production but consumed only about 30 per cent. Actually more than 8 per cent was doubtless "exported" to other states because the particular kinds and qualities of brick wanted might not have been available within the home state and because the production center nearest the consumer may have been located on the other side of the state boundary. Other relatively important producing states which consumed less than they produce and therefore had a balance to send out were Indiana, North Carolina, Texas and Virginia.

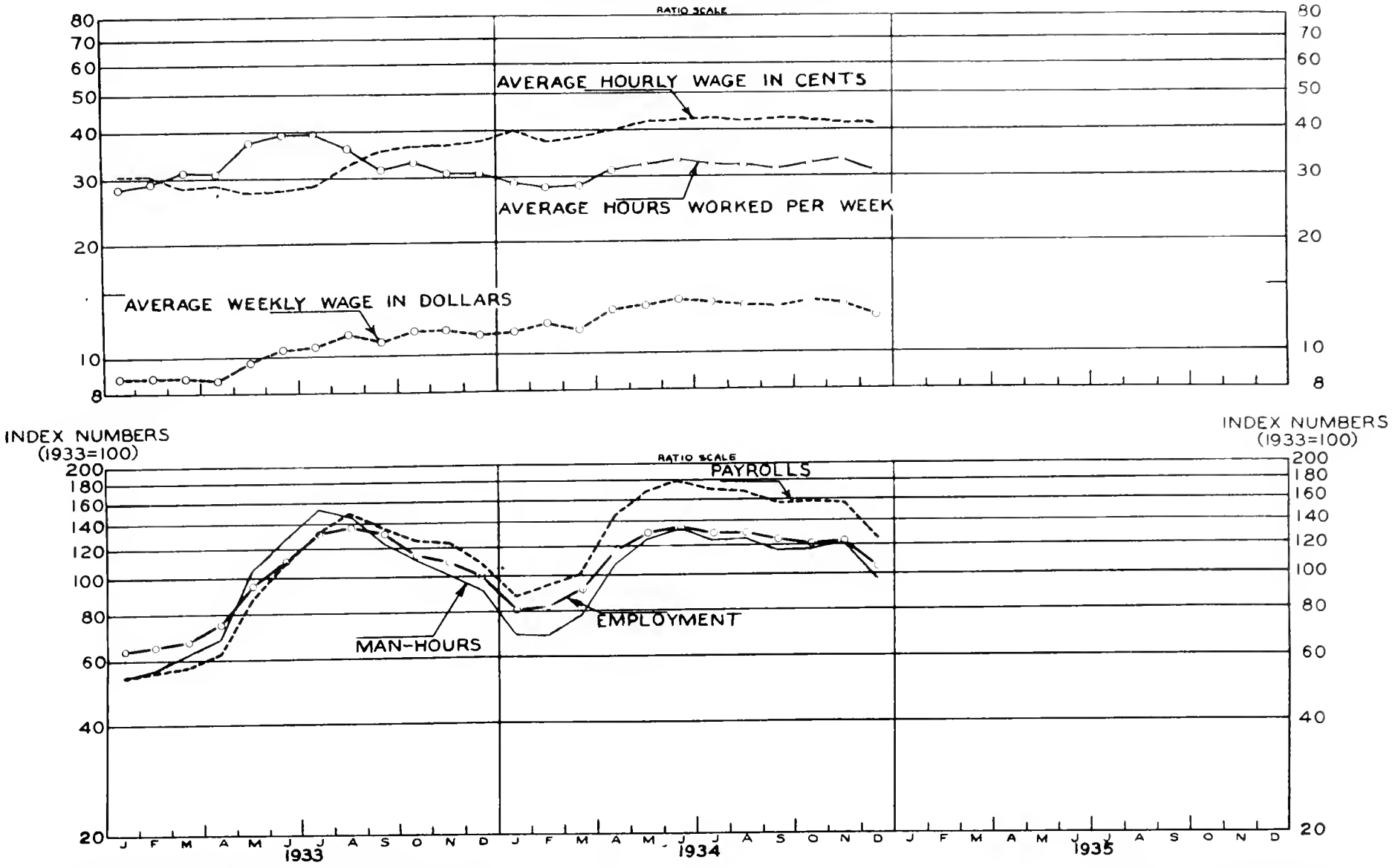
In the converse situation were those states which used considerably more brick than they produced and thus had to "import" the product from other states. Conspicuous examples were New York, Michigan, Massachusetts and New Jersey.

1/ It is emphasized that the figures given in Table XXI are in the nature of estimates only. As explained in footnote a/ the production data are not completely broken down for all states. Furthermore, as indicated below, it does not necessarily follow that consumption within a state is met out of that state's production merely because the quantity of brick produced there is large enough to supply it.

CHART 1

STRUCTURAL CLAY PRODUCTS INDUSTRY

(AS DEFINED IN CODE NO. 123)



SOURCE: BUREAU OF LABOR STATISTICS IN COOPERATION WITH NRA
NOTE - DATA COVER FACTORY EMPLOYEES ONLY

DIVISION OF REVIEW-NRA
STATISTICS SECTION

New York City, for example, consumes structural clay products from plants located in New Jersey, Pennsylvania, Massachusetts, Connecticut, Ohio, and a number of other states. The Chicago market draws upon the production of plants located in Ohio, Indiana, Missouri, Iowa, Wisconsin, and elsewhere. St. Louis, Missouri, situated on a state border, consumes a considerable volume of structural clay products from Illinois, Ohio, Wisconsin, and Nebraska. Other large cities located in states of small production also draw upon plants in other states. On important face-brick contract jobs for example, it is usual that there is keen competition from producers in several states. A survey made of plants located in Ohio and Western Pennsylvania (states producing the largest amount of structural clay products) indicated that between 40 and 50 per cent of the products are shipped outside of these states. Kansas has 15 large plants within 70 miles of the Oklahoma line, some only a mile or two from the line. Oklahoma has 5 plants which are on the average fewer than 70 miles from the state line. 1/

1/ Public Hearing on the Structural Clay Products Industry, August 8, 1933, page 19.

TABLE XXI

Comparison of Production and Consumption of Brick, by States, 1929

State	Value of Production[a] (000's)	Percentage of Total[a] Production	Value of Consumption (000's)	Percentage of Total Consumption
Total	$103,959	100.0	$65,058	100.0
Alabama	1,933	1.8	662	1.0
Arizona	440	.4	156	.2
Arkansas	433	.4	306	.5
California	5,587	5.5	2,494	3.8
Colorado	944	.9	223	.3
Connecticut	1,763	1.7	1,299	2.0
Delaware	230	.2	346	.5
District of Columbia	-	-	601	.9
Florida	303	.2	286	.4
Georgia	1,447	1.4	1,299	2.0
Idaho	49	.0	34	.1
Illinois	11,933	11.5	6,302	9.6
Indiana	3,430	3.3	1,421	2.2
Iowa	1,069	1.0	756	1.2
Kansas	1,627	1.6	664	1.0
Kentucky	643	.6	442	.7
Louisiana	520	.5	322	.5
Maine	311	.3	168	.2
Maryland	1,385	1.3	926	1.4
Massachusetts	1,435	1.4	3,315	4.5
Michigan	2,150	2.0	4,875	7.5
Minnesota	436	.4	673	1.1
Mississippi	1,106	1.1	138	.2
Missouri	2,436	2.3	1,453	2.2
Montana	111	.1	165	.3
Nebraska	711	.7	574	.9
Nevada	-	-	1	-
New Hampshire	526	.5	88	.1
New Jersey	5,633	5.3	2,301	4.3
New Mexico	82	.1	49	-
New York	7,515	7.2	12,137	18.6
North Carolina	2,470	2.4	650	1.0
North Dakota	31	.1	147	.2
Ohio	12,877	12.4	6,682	10.4
Oklahoma	1,544	1.5	332	.8
Oregon	190	.2	187	.3

(Continued)

TABLE XXI (Continued)

Comparison of Production and Consumption of Brick, by States, 1929

State	Value of Production[a/] (000's)	Percentage of Total[a/] Production	Value of Consumption (000's)	Percentage of Total Consumption
Pennsylvania	$14,529	14.0	$5,933	9.2
Rhode Island	-	-	437	.8
South Carolina	904	.9	221	.3
South Dakota	-	-	105	.2
Tennessee	1,709	1.6	703	1.1
Texas	3,551	3.4	1,719	2.6
Utah	777	.8	243	.4
Vermont	-	-	72	.1
Virginia	2,694	2.6	878	1.3
Washington	934	.9	450	.7
West Virginia	902	.9	223	.3
Wisconsin	876	.8	1,212	1.9
Wyoming	72	.1	18	-
Others[a/]	7,839	7.6		

Source: Census of Manufactures, 1929, p.648 (Common, Face, Vitrified, Enameled, Hollow Brick); Census of Construction, 1930, p120 (Common, Face, Paving, etc., Brick)

a/ Production data for most states are incomplete in that the value of production was given by groups rather than individually for the less important states in the various industries. The total for these groups is given under "Others." Complete data are presented only for Delaware, Florida, Kansas, Mississippi, Ohio, Pennsylvania, South Carolina, Utah, Virginia and Wisconsin.

Type of Distributive Outlet 1/

The channels of distribution of structural clay products in the four branches of the Industry vary from one branch to another. Face brick and structural clay tile are largely sold through retail and wholesale dealers. Those plants which engaged principally in the production of face brick in 1929 made 64 per cent of their sales to such dealers, 13 per cent to their own wholesale branches and the remaining 23 per cent to consumers (including industrial consumers). In the case of hollow building tile these per cents were 69, 4, and 27. Common brick is also marketed to a considerable extent through dealers but perhaps more than half of the total is sold direct to contractors and other consumers. In 1929, these direct sales amounted to 55 per cent of the total. Paving brick, on account of the character of its markets, is practically never sold through dealers but is sold direct to industrial and other large consumers and contractors.

1/ This section is based on data published by the Bureau of the Census in Distribution of Sales of Manufacturing Plants, 1929.

Volume of Imports and Exports

Imports and exports of the products of the Industry have never been considered as important items.

Shifts of Centers of Production

There have been no material shifts of centers of production in the Industry for many years.

Chapter V

TRADE PRACTICES

Unfair Trade Practices Prior to the Code

At various times in 1930 and 1931, the Federal Trade Commission held conferences with representatives of three branches of the Industry (Structural Clay Tile, Face Brick, and Common Brick). Fair trade practice rules were issued for each of these groups by the Commission on August 22, August 17, and July 19, 1931, respectively covering rules on certain unfair trade practices such as:

1. Discrimination in price between different purchasers.
2. Secret payment of rebates.
3. Giving money or anything of value to agents of customers or of competitor's customers.
4. Maliciously inducing or attempting to induce breach of existing contracts.
5. False disparagement of grade or quality of goods of competitors.
6. Defamation of competitors.
7. Imitation of trade marks, trade names, or slogans.
8. Shipment of goods on consignment with the intent and effect of injuring a competitor.
9. Deviation from established standards of the Industry.
10. Shipping or delivering products which do not conform to the samples submitted.
11. Coercing the purchase of several or a group of products as a condition to the purchase of one or more products under the exclusive control of the seller.

These were what are known as "Class A" rules and are enforceable by decree of the Commission. In addition to them, certain other rules, known as "Class B" rules were published at the time. These latter rules are permissive in the groups affected and are not necessarily enforceable by order of the Commission.

The Class A unfair trade practices referred to by the Federal Trade Commission are all covered, though in different form, by the Trade Practice Rules of the Code, and in addition the following rules were approved:

12. Repudiation of contracts written or oral.
13. Making misleading guarantees of products.
14. The giving of premiums in connection with sales.
15. Sale of inferior products on understanding that superior products would be delivered.
16. Interference with contracts.

17. Making of lump sum bids or installed prices, thereby concealing unit prices or guaranteeing that any specific quantities would do a job.
18. Acceptance of stocks or bonds except at current marketable cash value in payment for Industry products.

Unfair Trade Practices Under the Code

The former Code Authority has stated that after the Code became effective it had complaints or reports concerning alleged violations of the unfair trade practices described in Article XI, Sections a, b, d, e, f, i, o, and q, of the Code. These constitute essentially the items listed above as numbers 2, 4, 5, 6, 9, 10, 15, 16, and 17.

Chapter VI

THE INDUSTRY - GENERAL INFORMATION

Operations of the Industry

The manufacture of structural clay products begins with the quarrying, excavating, or mining of the raw materials. The materials are then ground and tempered with water, shaped into the type of unit being manufactured, dried preparatory to burning, burned in kilns for periods ranging from two to three weeks, and sorted according to perfection of color, degree of burning, etc. The products are then ready for distribution. Some large concerns, manufacturing all or part of the products of the Industry, own or control thirty or more plants each, yet there are hundreds of small individually-owned common brick plants.

Trade Associations

During the years when building construction was more active, four national trade associations actively promoted the development of the Structural Clay Products Industry. These associations, which also sponsored the Code, were:

1. The Brick Manufacturers Association, founded in 1918, representing the common brick manufacturers.

2. The American Face Brick Association, founded in 1912.

3. The National Paving Brick Association, founded in 1905.

4. The Structural Clay Tile Association, founded in 1919.

Each of these associations has carried on advertising and research programs. In recent years the low demand for the products has curtailed these activities.

Late in 1934, Structural Clay Products, Inc., was formed as a single organization to promote the use of the Industry's products. While the National Paving Brick Association is carrying on its own work, due to the special nature, of that branch of the Industry, it is affiliated with the new organization. The Brick Manufacturers Association also is continuing its work -- without affiliation -- while the other two associations have ceased active work pending determination of the success of the new organization.

Organization of Labor

The United Brick and Clay Workers of America, with headquarters at Chicago, Illinois, represents organized labor in the Industry. It has been claimed by the Industry that, during many years of operations, both unionized and open shop, manufacturers have had comparatively few disputes with labor.

Present Financial Condition of the Industry

No figures are available on the financial condition of the industry for the years 1929, 1931, and 1933. The earning capacity of the Industry very probably follows the same trend line as does the value of structural clay products consumption. A comparison of the latter series with the estimated value of total construction indicates that a more extreme decline took place between 1929 and 1934 in the Structural Clay Industry than in general construction. (See Table XXII below)

TABLE XXII

Comparison of Estimated Total Value of Construction and Total Value of Structural Clay Products Consumption (Index, 1926 - 100)

Year	Estimated Construction Value for 48 States a/	Structural Clay Products Consumption b/
1926	100.0	100.0
1927	97.5	89.9
1928	100.4	84.1
1929	88.6	72.0
1930	66.1	50.3
1931	48.1	34.4
1932	21.6	15.8
1933	19.7	11.6
1934	23.4	12.6

Source: As indicated in footnotes.

a/ Adjustment to totality by NRA Division of Review, of F. W. Dodge Reports for total construction contracts awarded in 37 states.

b/ Computed by NRA Division of Review, from Census of Manufactures figures. (Beginning stock, plus production, less ending stock.)

Effect of the Code

There was a marked increase between 1933 and 1934 in employment, payrolls and wage rates. Average hours worked per week were lower in 1934 than in 1933 and were subject to less extreme fluctuation. These series are presented by months for 1933 and 1934 in Table XXIII, below, and in Chart I, supra.

Trade Marks

Although many manufacturers adopt trade names for their products and sell them under such names, there have been comparatively few trade names registered. Certain types of Industry products are given names and occasionally such names are stamped upon the product.

TABLE XXIII.

Factory Employment, Payrolls, Hours, and Wages 1933-1935 a/

Month b/	Indexes (1933=100)			Average Hours Worked Per Week e/	Wages	
	Employment c/	Payrolls c/	Man-Hours d/		Average Hourly e/	Average Weekly c/
1933						
Jan.	63.8	53.9	53.6	28.2	$.306	$8.75
Feb.	65.2	55.3	56.3	29.0	.306	8.78
Mar.	67.2	57.1	62.2	31.1	.283	8.75
Apr.	74.8	62.4	68.6	30.8	.289	8.60
May	95.3	88.3	105.3	37.1	.275	9.64
June	110.0	108.8	127.8	39.0	.278	10.38
July	131.5	133.5	153.1	39.1	.285	10.65
Aug.	137.2	149.2	146.7	35.9	.322	11.43
Sept.	131.3	135.2	122.8	31.4	.352	10.82
Oct.	114.3	126.0	111.3	32.7	.361	11.64
Nov.	109.7	123.0	101.0	30.9	.364	11.67
Dec.	99.8	107.3	91.2	30.7	.373	11.29
Average	100.0	100.0	100.0	33.0	.316	10.20
1934						
Jan.	80.4	87.9	69.0	28.8	.399	11.48
Feb.	82.2	94.4	68.6	28.0	.373	12.01
Mar.	95.1	100.8	80.1	28.3	.382	11.51
Apr.	119.7	144.6	111.6	31.2	.399	13.09
May	134.4	167.6	128.9	32.2	.421	13.46
June	138.7	178.2	137.1	33.2	.427	13.90
July	133.4	169.0	128.3	32.3	.431	13.70
Aug.	134.2	165.7	128.7	32.2	.421	13.49
Sept.	129.2	155.1	120.0	31.2	.428	13.31
Oct.	125.2	157.1	120.8	32.4	.423	13.84
Nov.	127.0	155.2	125.2	33.1	.414	13.56
Dec.	108.6	124.1	99.9	30.9	.413	12.66
Average	117.3	141.6	109.8	31.2	.411	13.00

Source: Unpublished data secured by the Bureau of Labor Statistics in cooperation with the Division of Research and Planning, NRA.

a/ Reporting establishments considered to be almost completely covered by the Structural Clay Products Industry Code.

b/ Figures reported were for the payroll period nearest the 15th of the month.

c/ Based upon a representative sample covering an average of 291 establishments and about 5,680 employees in 1933. The sample was somewhat larger in 1934.

d/ Computed: Index of employment times average hours worked per week reduced to 1933=100.

e/ Based upon a representative sample covering an average of 120 establishments and about 2,340 employees in 1933. The sample was considerably larger in 1934.

Imports

Imports have been small in volume and have not appreciably affected the Industry.

Experts

Men who, by training and experience are thoroughly familiar with the Industry, are:

Manufacturing, sales, and administration

Mr. Paul B. Belden, General Manager
Belden Brick Company, Canton, Ohio.

Mr. F. W. Bottesworth, President,
Western Brick Company, Danville, Illinois.

Mr. W. Gardner Long, Treasurer,
New England Brick Company,
#3 Park St., Boston, Massachusetts.

Mr. O. W. Renkert, President,
Metropolitan Paving Brick Company,
Canton, Ohio.

Ceramics

Mr. L. B. Rainey, Vice President,
Fallston Company, New Brighton, Pennsylvania.

Professor G. A. Bole,
Experiment Station,
Ohio State University,
Columbus, Ohio.

Professor C. W. Parmelee,
Department of Ceramic Engineering,
University of Illinois,
Urbana, Illinois.