

**UNITED STATES TARIFF COMMISSION**

**CERAMIC MOSAIC TILE**

**Report to the President  
on  
Escape-Clause Investigation No. 7-100  
Under the Provisions of Section 7  
of the  
Trade Agreements Extension Act of 1951, as Amended**



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**Washington  
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(TC29102)

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REPORT TO THE PRESIDENT

U.S. Tariff Commission  
May 10, 1961

To the President:

The U.S. Tariff Commission herein reports the results of its investigation No. 7-100 under section 7 of the Trade Agreements Extension Act of 1951, as amended, to determine whether CERAMIC MOSAIC TILES (ceramic tiles of less than 6 square inches in facial area), provided for in paragraph 202(a) of the Tariff Act of 1930, are, as a result in whole or in part of the customs treatment reflecting the concessions granted thereon under the General Agreement on Tariffs and Trade, being imported into the United States in such increased quantities, either actual or relative, as to cause or threaten serious injury to the domestic industry producing like or directly competitive products.

The aforementioned investigation was instituted on November 10, 1960, by operation of section 3(b)(1) of the Trade Agreements Extension Act of 1951, as amended. Public notice of the institution of the investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice at the office of the Commission in Washington, D.C., and at its office in New York City, and by publishing such notice in the Federal Register (25 F.R. 10899) and in the November 17, 1960, issue of Treasury Decisions. The public hearing was duly held on March 7, 8, and 9, 1961, and all interested parties were given opportunity to be present, to produce evidence, and to be heard.

In addition to the information obtained at the hearing, the Commission in this investigation obtained information from its files, through fieldwork by members of the Commission's staff, and from responses to questionnaires sent to domestic producers and importers

### Findings<sup>1/</sup>

As a result of the investigation, including the hearing, the Commission finds as follows:

- (a) That as a result, in part, of the duty reflecting the concessions granted thereon in the General Agreement on Tariffs and Trade, ceramic mosaic tiles (ceramic tiles of less than 6 square inches in facial area), provided for in paragraph 202(a) of the Tariff Act of 1930 (except certain high-priced tiles and except tiles in sheets
  - (i) containing over 300 tiles per square foot, or
  - (ii) having none, or not more than half, of the tiles with faces which (disregarding rounded

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<sup>1/</sup> The unanimous findings in this escape-clause investigation differ from the related peril-point findings of the Commission. Under the peril-point findings, all classes of ceramic mosaic tile were found to be causing serious injury and the recommended remedy involved the imposition of rates of duty higher than here found to be necessary. Commissioners Schreiber and Sutton, in conformity with their views expressed in investigations Nos. 7-96 and 7-97 regarding tennis rackets and baseball gloves, respectively, deem it necessary to explain that, on the basis of further consideration of the facts, they believe their original peril-point findings are in error to the extent that they differ from the present findings.

corners) are in the form of triangles, rectangles, or polygons and with such triangles, rectangles, or polygons as there may be forming an integral part of the pattern), are being imported into the United States in such increased quantities, both actual and relative, as to cause serious injury to the domestic industry producing like products; and

(b) that in order to remedy serious injury to the domestic industry concerned, it is necessary that the duties on such tiles be increased as follows: on tiles valued not over 40 cents per square foot, to  $12\frac{1}{2}$  cents per square foot, but not less than 60 percent nor more than 90 percent ad valorem; and on tiles valued over 40 cents per square foot, to  $25\frac{1}{2}$  percent ad valorem but not less than 24 cents per square foot.

#### Recommendation

In view of the foregoing findings, the Commission recommends that the appropriate tariff concession granted in the General Agreement on Tariffs and Trade be modified to permit the application to the aforementioned tiles of the duties specified in finding (b) above.

PRINCIPAL CONSIDERATIONS BEARING ON THE FOREGOING  
FINDINGS AND RECOMMENDATION

U.S. Customs Treatment

Ceramic mosaic tile is a floor and wall tile provided for by name in paragraph 202(a) of the Tariff Act of 1930. The original rates of duty on such tile were 10 cents per square foot but not less than 50 percent or more than 70 percent ad valorem on tile valued at not more than 40 cents per square foot, and 60 percent ad valorem on tile valued at more than 40 cents per square foot (table 1 of the statistical appendix).

The rates of duty on tile valued at more than 20 cents per square foot were reduced effective January 1, 1948, pursuant to the General Agreement on Tariffs and Trade (GATT), by reducing the minimum ad valorem rate on tile valued at not more than 40 cents per square foot from 50 percent to 30 percent. Reductions in duty on all ceramic mosaic tile valued at not more than 40 cents per square foot were again negotiated under the GATT and became effective June 6, 1951.

The rates of duty on all ceramic mosaic tile were reduced pursuant to GATT (1956) in three steps, effective June 30, 1956, June 30, 1957, and June 30, 1958. The present rate of duty on tile valued at not more than 40 cents per square foot is  $4\frac{1}{4}$  cents per square foot, but not less than 21 percent or more than 30 percent ad valorem; on tile valued at more than 40 cents per square foot the rate is  $25\frac{1}{2}$  percent ad valorem.



## Description, Manufacture, and Uses

Description

Ceramic mosaic tile--as defined in the American Society for Testing Materials Designation C242-58T, revised June 1958, and in Federal Specification 55-T-308b, of November 16, 1959--is that ceramic tile having a facial area of less than 6 square inches. The thickness ranges from less than  $3/16$  inch to about  $5/16$  inch, and for standard floor tile it is generally about  $1/4$  inch. Usually tiles are made with faces in the shape of squares or oblongs, which fit together to form various designs; however, the faces may be triangular or polygonal, or circular, heart-shaped, leaf-shaped, or of other configurations bounded in part at least by irregular or curved lines. Probably the most common designs in use today are the straight-joint patterns composed of a single size of square-face tile, which may be from  $3/8$  inch square to  $1-1/16$  inches square, and the so-called block random patterns composed of two sizes of square-face tile and one size of oblong-face tile. These block random designs may vary from a  $3/8$ -inch by  $13/16$ -inch series to a  $1-1/16$ -inch by  $2-3/16$ -inch series, these dimensions being those of the oblong piece in the design. The corners of rectangular, triangular, or polygonal-shaped tile are usually sharp but sometimes are rounded. The edges bounding the face of such tile may be square or round (cushion-edged). Square-edged floor tile is the more common, whether domestic or imported, but there is a trend towards the increased use of cushion-edged mosaic tile, particularly that produced domestically.

Nearly all the ceramic mosaic tile of commerce moves in sheets which are usually 1 foot square or 1 foot by 2 feet in dimension. The sheets consist of many individual tiles which have been arranged in designs and then either "face mounted," i.e., mounted on paper cemented to the faces of the tiles with a water-soluble adhesive, or "back mounted," i.e., mounted permanently, usually with a water-resistant adhesive, on a loosely woven mesh or on perforated material cemented to the backs of the tiles. The back-mounting material usually consists of fabric or special perforated paper or plastic.

The faces of ceramic mosaic tile may be either glazed or unglazed. Nearly 80 percent of such tile sold in 1960 was unglazed, although the use of glazed tile is increasing. In recent years there has been a demand for mosaic tile in many colors, and the palette of colors of glazed tile is more varied and more pleasing than that of unglazed tile. Many mosaic tile designs are now made of glazed and unglazed tile combined, the glazed tiles frequently being used for accent colors. Some tiles are decorated over the glaze with gold or other metals, or are hand decorated in various colors. Most of such tiles are imported and are relatively very high priced.

The bodies of ceramic mosaic tiles are dense, and impervious to water, or nearly so. Most of them fall into either of two classifications--porcelain type or natural-clay type--although there are combinations of these two and variations from them.

The so-called ceramic mosaic tile specialties are identifiable by one, or both, of two characteristics, namely, (1) the relatively

small average facial area of the individual tiles in the pattern (more than 300 tiles per square foot), and (2) the presence in the pattern--regardless of the facial area of each of the individual tiles--of a substantial number (at least 50 percent) of individual tiles with circular, heart-shaped, leaf-shaped, or other facial configurations which are bounded, in part at least, by irregular or curved lines. Specialties are always mounted in sheets which are generally about 1 foot square; they are almost always back mounted and usually, but not always, glazed.

#### Manufacture

Ceramic mosaic tile is produced by at least two different methods. In some factories the raw materials, which are purchased in a relatively pure and moisture free condition, are mixed dry in the proper proportions and just sufficient water is added to make the particles cohere when pressed. In other factories the dry materials are mixed in a slurry, run over a magnet and through a sieve to remove impurities, filter pressed, dried, and pulverized. This powder, like the dry materials in the previous method, is mixed with just enough water to make the particles cohere when pressed. The dampened mixture is pressed in metal molds with machines which may be either semiautomatic or entirely hand operated, and the resulting tile is dried, bedded in sand in refractory boxes or "saggers," and heated in tunnel kilns which burn gas or oil, to a temperature sufficient to make the tile body impervious to water or nearly so. The heating and cooling process

usually takes 24 to 40 hours, after which the sand is removed from the tiles, and defective tiles are rejected. The good tiles are then taken either to bulk inventory, to the mounting department, or to the glazing department. Tiles to be glazed are passed through a glaze spraying machine which coats the face of the tile with a mixture of materials which, when fired, produces either a glossy or a matte vitreous surface, depending upon what surface is desired. Some producers use the so-called single fire process in which the tile is glazed before it is fired and the body and glaze are matured together in a single heat treatment. The single-fire process is usually less costly than the two-fire process. Glazed floor tiles should have a matte surface so that the surface will have a relatively high coefficient of friction, thus making them less slippery. Two producers make mosaic tile with a glaze especially suited to floors carrying light traffic, and these and three other producers make glazed mosaic tile for other uses, primarily for surfacing walls.

Porcelain-bodied tile, the most important type, is composed generally of white firing clay, feldspar or other fluxing agent, or a combination thereof, and ground silica. The natural clay tile body usually contains, in place of part or all of the white firing clay and the flux, one or more natural clays that are more or less self-fluxing and do not fire to a white color. If a white surface is desired for glazing, a white body slip, or engobe, is sprayed on the face of the tile before it is sprayed with the glaze material. Colored tile bodies are obtained by adding metal oxides to the body mixtures, and mottled effects are obtained by a partial blending of different colored materials.

Ceramic-mosaic-tile glazes have a wide range of colors, obtained by adding metal compounds, usually oxides, to the base-glaze formula. Since the glaze is much thinner than the body, much less of the relatively expensive coloring material is required to obtain a given color in the glaze than to obtain the same color by adding the coloring material to the body. Also, more colors are stable at the lower glaze-maturing temperatures than at the higher temperatures necessary to vitrify the porcelain-type bodies.

In the mounting room the finished tiles are placed by hand on mounting boards in predetermined patterns with spacing strips on the board separating the tiles by the width of the ultimate mortar joints. The mounting material, which is paper if the tile is to be face-mounted, is then cemented, with a water-soluble adhesive, to the face of the tile. If the tile is to be back-mounted, the mounting board and tile are turned over, and the back-mounting material is cemented with a water-resistant adhesive to the back of the tile. The sheets so produced are packed in cartons for inventory or for shipment.

With the trend to multiplication of colors and designs of ceramic mosaic tile, much of its production has become almost a custom business. Frequent changes in the color and texture formulas for the body and glaze entail frequent cleanups of the mixing mills and thus add to the costs of production. Frequent changes in designs being mounted in the mounting room also add to production costs.

Uses

It is estimated on the basis of data obtained from a supplementary questionnaire sent by the Commission to producers and importers, that about 98 percent of the ceramic mosaic tile consumed in the United States in 1960 was installed as a surfacing material in building construction, either on floors or interior or exterior walls or on counter tops, columns and the like. The remaining 2 percent of mosaic tile consumed was sold in hobby kits and to manufacturers of articles composed in part of such tile.

Practically all of the ceramic tile used in building construction is installed by trained tile setters, whether they are ceramic tile contractors or employees of dealers in other surfacing materials. In order to promote a superior reputation for ceramic tile as a surfacing material, domestic producers for years attempted to limit its distribution to experienced installers. Only in very recent years, with the development of back-mounting and of adhesives which put tile installation in building structures within the capabilities of the more adventurous of the do-it-yourself enthusiasts, has the industry promoted a wider scale distribution of their product and conducted a campaign to teach prospective consumers how to install it.

Ceramic mosaic tile is used largely as a floor-surfacing material where resistance to wear or moisture, or both, are important factors. In recent years, however, the use of such tile on interior and exterior walls as a medium of architectural expression has been increasing. Only

by using tile of the mosaic sizes can architects obtain the effects for which they strive. Mosaic tile is also being used in luxury bathrooms, on "vanitories" (built-in vanity-wash basin combinations), and on kitchen counters.

In the last several years an increasing amount of glazed mosaic tile which "mounts" a relatively large number of pieces per square foot has been used to make articles of tile, such as table tops, ash trays, trivets, and the like. Substantial quantities of mosaic tile are sold in hobby kits for those who wish to make such articles in their homes. Nearly all of these tiles are specialties. Practically none of this type of tile is produced domestically.

Do-it-yourself use.--There are no dependable estimates of the quantity of ceramic mosaic tile installed by the homeowner. To obtain even approximate data would require a canvass of all potential retail outlets, such as resilient floor tile stores, building supply stores, mail-order houses, hobby supply shops, and some ceramic tile contractors that sell over the counter. Even such a canvass might be inconclusive because of lack of data by such outlets concerning the type of purchaser and his intended use.

Hobby and tile kits, and manufactures of tile ornamented articles.--Imported glazed tiles, particularly specialties are being used to an increasing extent in the hobby trade and by manufacturers that produce articles made in part of, or ornamented with, mosaic tile. The Commission canvassed producers and importers to obtain data on the

approximate amount of tile so used. From replies to these supplementary questionnaires it appears that the ceramic mosaic tile so used by manufacturers and consumers in 1960 probably did not exceed 1.3 million square feet, or about 2 percent of domestic consumption of ceramic mosaic tile in that year.

#### U.S. Producers

##### Location and size

There are 15 producers of ceramic mosaic tile operating 15 plants located in 11 States. Three plants are located in Ohio, two each in New Jersey and Pennsylvania, and one each in Massachusetts, New York, West Virginia, Mississippi, Indiana, Arkansas, Texas, and California. One company producing ceramic mosaic tile is a subsidiary of a large corporation which produces a variety of building materials. Another company is owned by a larger company producing unrelated items. Two other producers of ceramic mosaic tile are owned by a third producer of such tile.

The productive capacity in 1960 of 14<sup>1/2</sup> of the individual plants ranged from a little more than 1 million square feet to more than 9 million square feet of ceramic mosaic tile per year. Five plants have annual capacities of 5 million to 9 million square feet, six plants

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<sup>1/</sup> The company operating the 15th plant claims no productive capacity for mosaic tile since it produces only sufficient amounts of such tile to match tile that it had previously sold. This company's plant is devoted almost wholly to the production of wall tile. Productive capacity is based on full-time operation of all mosaic tile presses for 40 hours per week, 52 weeks per year, or on the kiln capacity, whichever is smaller.



have capacities of 2 million to 3 million square feet, and three plants have annual capacities of about 1 million square feet each.

The total productive capacity of domestic producers in 1960 was about 57 million square feet per year, a considerable increase from their aggregate capacity of 43 million square feet in 1955. The capacity by years was as follows:

<u>Year</u>	<u>Capacity Square feet</u>
1955-----	43,000,000
1956-----	48,000,000
1957-----	52,000,000
1958-----	54,000,000
1959-----	56,000,000
1960-----	57,000,000

The output of seven producers, in plants producing mosaic tile, is all, or virtually all, ceramic mosaic tile. The remaining eight producers manufacture wall tile in addition to ceramic mosaic tile. For these eight producers, mosaic tile accounted for from less than 2 percent to nearly 70 percent of the value of their respective total sales in 1960 of all products manufactured in plants producing mosaic tile.

#### Production, sales, inventories, and exports

U.S. production of ceramic mosaic tile increased from 35.8 million square feet in 1955 to 38.3 million square feet in 1956, declined to 35.2 million in 1957, and then increased to 39.9 million square feet in 1959. Production was 35.6 million square feet in 1960, or about the same as in 1955 and 1957 (table 2).

Most of the production of mosaic tile consists of standard-grade unglazed tile. Production of glazed mosaic tile has increased from about 8 percent<sup>1/</sup> of total production of mosaic tile in 1955 and 1956 to about 11 percent of total production in 1960 (table 2). In the earlier years four companies manufactured glazed mosaic tile and in 1960 glazed mosaic tile was produced by five companies. Production of glazed specialties, all by one plant, has never been a significant part of total production. Second-grade tile (unglazed) has accounted for about one-third of 1 percent of total production over the 6-year period 1955-60.

Sales of ceramic mosaic tile by domestic producers increased from 36.1 million square feet in 1955 to 36.6 million square feet in 1956 (table 3). The recession of 1957-58 was accompanied by lower sales, but the considerable increase in building in 1959 was accompanied by a marked increase in sales, which rose to 39.2 million square feet. Sales of 34.7 million square feet in 1960 were about 11 percent below those in 1959. The decline was attributable, only in part, to the decline in building construction.

The ratio of sales of domestic tiles to U.S. consumption of all ceramic mosaic tile declined from 94 percent in 1954 to 65 percent in 1959 and

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<sup>1/</sup> One producer that began making a small amount of glazed tile before 1955 did not report it separately prior to 1960, when glazed tile accounted for about 6 percent of their production of mosaic tile.

to 58 percent in 1960. Excluding specialties, the ratio of domestic sales to consumption was about 94 percent in 1954, 68 percent in 1959, and 63 percent in 1960.

A factor affecting the ratio of domestic sales to U.S. consumption of all types of mosaic tile has been the marked increase in the last several years in sales of imported glazed specialties, which, in 1960, accounted for about 18 percent of total sales of imported ceramic mosaic tile. This represented between 4 million and 5 million square feet, equivalent to 7 or 8 percent of apparent domestic consumption of all ceramic mosaic tile.

Producers' inventories of all types of ceramic mosaic tile increased steadily over the period 1955-60 (table 4). Inventories at the end of 1960 ranged, among producers, from about 20 percent to more than 100 percent of sales in that year, and for the producers in the aggregate averaged 31 percent of sales. It has been necessary to enlarge inventories considerably as a result of the great increase in recent years in the variety of types, designs, and colors of ceramic mosaic tile.

Exports of domestic tile showed a downward trend during 1956-60 (table 10); however, they amounted to less than 1 percent of annual production during that period.

## U.S. Imports

There were about 85 U.S. importers of ceramic mosaic tile in continental United States in mid-1960,<sup>1/</sup> about one-third of whom operated in New York City and vicinity; other importers were located in 15 or more States throughout the country, the largest number being in California and in Florida.

Of the 70 importers who responded to the Commission's questionnaires,<sup>2/</sup> 12 accounted for about 50 percent of all ceramic mosaic tile imported in 1960; 40 of the 70 began importing only in 1959 or 1960. In 1955 only 11 of the 70 importers imported ceramic mosaic tile. Most of the firms that imported ceramic mosaic tile (used predominantly as floor tile) also import wall tile; some are trading companies that import a wide variety of other products, as well. A few tile contractors import for their own use, and two domestic producers have recently started to import ceramic mosaic tile.

Trend and composition of U.S. imports

The bulk of the unglazed ceramic mosaic tile that is imported is similar in quality and design to that produced domestically. Many of the designs and color combinations of the imported tiles are the same as those which are popular items for U.S. producers.

About half of the glazed mosaic tiles imported in 1960 were specialties of distinctive design and size, but a substantial part of

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<sup>1/</sup> There were also several importers in Hawaii and Puerto Rico that were not included in the Commission's canvass of importers. Several new importers entered this business in the last half of 1960.

<sup>2/</sup> These importers accounted for about three-fourths of all ceramic mosaic tile imported in 1960.

the glazed tiles imported were similar to those produced domestically, and competed directly with them.

U.S. imports of ceramic mosaic tile have risen rapidly in recent years, particularly from 1954 to 1955, and from 1958 to 1959 (tables 5 and 6). Imports, which amounted to 2.0 million square feet in 1954, rose to 5.1 million square feet in 1955, to 12.4 million in 1958, and to 24.6 million in 1959. Imports amounted to 28.3 million square feet in 1960, or to 15 percent more than in 1959.<sup>1/</sup> Imports of ceramic mosaic tile other than specialties in 1960 were about 10 percent greater than in 1959.

The decline in imports in late 1960 was due primarily to the recession in construction activity from the high level of 1959; the recession was accompanied by increasing inventories, and by tighter credit controls, which discouraged further purchases for inventory. About 10 percent of the imports in 1960 remained in warehouses rather than entering consumption (table 9).

The ratio of imports to domestic production rose rapidly from 7 percent in 1954, to 62 percent in 1959, and to 80 percent in 1960.

Whereas the ratio of importers' sales to domestic consumption was only 6 percent in 1954 (prior to the 1956 reduction in duty), the ratio rose to 35 percent in 1959 and to 42 percent in 1960 (table 10). If sales of specialties are excluded from this computation, the two latter ratios would be 32 percent and 37 percent, respectively.

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<sup>1/</sup> These data include the import classification in official statistics designated as "Other (than ceramic mosaic) unglazed tile" which, upon partial analysis, was found to consist predominantly of ceramic mosaic tile. Interviews with a customs examiner and importers, as well as the official Japanese export statistics (see table 7), support this conclusion. However, imports may be overstated to a small extent.

In all years since 1954 more than 95 percent of the imported tiles have entered in the lower valued tariff classification of not more than 40 cents per square foot in foreign value (table 5), and Japan has been the major supplier of such imports. The proportion of total imports of ceramic mosaic tile supplied by Japan rose from 61 percent in 1956 to 78 percent in 1960; Italy was the secondary supplier, except in 1955 and 1956; and Spain ranked third (table 6).

Most of the imports of ceramic mosaic tile have consisted of unglazed tile, but in recent years imports of glazed tile have constituted an increasing proportion of the total (table 8), as indicated by the following percentages derived from data reported to the Commission by U.S. importers of ceramic mosaic tile:

Year	Glazed tile		Unglazed tile	Total
	Specialties	Other		
1957-----	3.0	22.7	74.3	100.0
1958-----	4.2	22.9	72.9	100.0
1959-----	10.3	19.4	70.3	100.0
1960-----	18.9	19.0	62.1	100.0

#### Controls of Japanese exports of ceramic mosaic tile<sup>1/</sup>

With the substantial increase in exports of ceramic mosaic tile from Japan, the productive capacity of the Japanese industry has been increased. It was 30 percent greater in 1960 than in 1959; it has been reported that between 1958 and July 1960 about 30 new kilns were installed by the tilemakers.

<sup>1/</sup> Primarily a summary of the information contained in a Foreign Service Despatch from the American Consulate, Nagoya, Japan.

The Japanese Ministry of International Trade and Industry (MITI), while reviewing invoices covering exports of tile from Japan in the first half of 1960, found that many firms in the industry were selling below the floor prices established in 1958 by the Japanese industry. At that time (September 1960) MITI suggested that the industry take appropriate action to control exports of wall and mosaic tile to the United States and Canada. Possibly stimulated by the news of the Tariff Commission's investigation, the industry took steps in December 1960 to institute quota controls on exports of unglazed mosaic tile and to increase the minimum allowable export prices, called check prices, both as of January 1, 1961. For the first 6 months of 1961 this quota was fixed at 9.5 million square feet, compared with exports reported by the Japan Pottery Exporters' Association and the National Tile Industrial Federation of 9.2 million square feet during the first 6 months of 1960.

A new organization, called the Export Mosaic Tile Manufacturers Association, was to be responsible for quota allocations to tile manufacturers, and the Japan Pottery Exporters' Association was to review export-license applications to assure that all shipments to the United States were invoiced at or above the check prices. For unglazed tile these prices range between 13 and 18 cents per square foot and were only about 1 cent higher per square foot than the previous minimum prices agreed to by the Japan Export Tile Association.

Importers of Japanese tile, interviewed by the Commission's staff in March, 1961, stated that no quantitative restrictions had, as yet, been imposed upon their orders, but that the new check prices were in effect.

### Inventories

In order to furnish better service to their customers, most tile importers that handle primarily imported tile carry stocks at the major ports at which the tile is entered. The growing importance of adequate importers' inventories is indicated by the fact that at the end of 1960 their inventories were equivalent to 31 percent of their total sales that year, whereas in 1957 and 1958 the corresponding ratio was 18 percent (table 9). Relative to sales, importers' stocks at the end of 1960 were about the same as those of the domestic producers, whose inventory-sales ratio was also 31 percent (table 4); about 50 percent of the producers' inventories consisted of unmounted tile, but importers' stocks were virtually all of mounted tile.

About a third of the importers of ceramic mosaic tile reported no inventories on December 31, 1960; most of these importers delivered all, or virtually all, of the tile sold to the purchaser at the wharf upon arrival of the freighter from overseas. Practically all such importers were general trading companies.

### Costs of importing

Importers reported to the Tariff Commission the costs of importing their most recent large receipts of ceramic mosaic tile. Almost all



of these importations came from Japan and arrived in the last quarter of 1960.

The average costs of importing ceramic mosaic tile from Japan in the last quarter of 1960, as reported to the Commission by importers, are shown in the following tabulation:

<u>Item</u>	<u>Average cost of imported tile<sup>1/</sup></u>	
	<u>Cents per</u> <u>sq.ft.</u>	<u>Percent of landed</u> <u>duty-paid cost</u>
Invoice value, f.o.b. Japan----	21.8	69.2
Cost of delivery to U.S. port--	3.2	10.2
Duty paid by importer-----	5.2	16.5
Wharfage and cartage-----	1.0	3.1
Other costs-----	<u>.3</u>	<u>1.0</u>
Total landed duty-paid cost-----	31.5	100.0

<sup>1/</sup> Includes both glazed and unglazed tile.

#### U.S. Consumption

The Tile Council of America, Inc., established in 1945, has done a great deal to promote the use of ceramic mosaic tile. It has encouraged new uses for tile, as well as the use of a wider assortment of colors and shapes, and has administered a program of scholarship grants to promising young students of architecture. It also has a research center at Princeton, N.J. In 1960 the Tile Council spent a quarter of a million dollars on its advertising program.

Domestic consumption of ceramic mosaic tile rose from 30.4 million square feet in 1954 to 59.6 million square feet in 1959; excluding

specialties, consumption rose from about 30 million to 57.6 million square feet during this same period (table 10). Consumption of all mosaic tile increased further to 59.8 million square feet in 1960. Excluding specialties, consumption declined about 5 percent to 55.0 million square feet in 1960. The increased use of ceramic mosaic tile is indicated by the fact that although the value of residences and buildings constructed in 1960, based on constant dollars, was only 6.1 percent above that in 1955 (table 11), the consumption of ceramic mosaic tile rose by 48 percent between those years, and the consumption of mosaic tile, excluding specialties (about 25 percent of which are not used in building construction), rose by about 36 percent. Domestic production of all building materials was about 2 percent lower in 1960 than in 1955 (table 11). These data show that the amount of mosaic tile used per unit of construction, both excluding and including specialties, has risen rapidly, owing partly to the wider use of mosaic tile resulting from promotional efforts of both producers and importers, and partly to an increase in the number of bathrooms per housing unit.

The largest increase occurred from 1958 to 1959 when consumption including specialties rose by 13.4 million square feet and that excluding specialties rose by 11.8 million square feet, due partly to a major rise in residential construction, and also to a large increase in the use of glazed mosaic specialties on store fronts, columns, and the like. In 1960 further increased consumption of all ceramic mosaic tile resulted from an increase in the sales of imported tile which was greater than the decline in sales of domestic tile.

The fact that consumption of all ceramic mosaic tile increased about 0.2 percent from 1959 to 1960, although housing starts in 1960 were 18 percent lower than in 1959, reflects a wider use of ceramic mosaic tile, particularly of decorative glazed specialties for architectural designs. Architects, in a search for new media of expression, have found several new uses for mosaic tile. Thus, in 1960, the increased use of mosaic tile, other than for flooring, apparently more than offset the decline in the consumption of such tile used on floors.

About 72 percent of all ceramic mosaic tile consumed in the United States in 1960 was unglazed; excluding specialties, unglazed tile accounted for 78 percent. Consumption of unglazed imported tile accounted for 62 percent of total consumption of all imported mosaic tile, and for 76 percent of such sales if specialties are excluded. Much the greater part of the unglazed tile was laid on floors. While there are no reliable data on the proportion of glazed tile laid on floors, it probably did not exceed 5 percent of the total ceramic floor tile laid in 1960.

It is the contention of the importers that their ceramic mosaic tile has displaced resilient floor covering rather than similar domestic tile, in low-cost housing projects. The extent to which this contention is true cannot be determined, because it involves a question which often the owner or builder cannot answer, namely, "What floor covering would you have installed had the imported ceramic mosaic tile been unavailable at the price which you paid?"

## Channels of Distribution

Almost all ceramic mosaic tile is sold by the producer or importer either directly to the tile contractor who installs the tile for the owner of the house or building, or to a jobber or distributor who in turn sells to the contractor. Small amounts are sold to retail outlets, such as hobby-supply shops, which sell the tile chiefly for use in home handicrafts, and some tile is sold to manufacturers who use it in making table tops, ash trays, and the like (see section on uses).

Tile importers in 1960 sold a much larger proportion (69 percent) of their ceramic mosaic tile through wholesale distributors than did the domestic producers, who sold 39 percent through this channel (table 12). The producers as a group have a much more extensive system of warehouses than do the importers as a group; and these warehouses, in effect, operate as independent distributors. About 19 percent of the ceramic mosaic tile sold by tile importers to wholesale distributors in 1960 was sold to distributors of resilient floor tile; in contrast, only 8 percent of the ceramic mosaic tile sold by domestic producers to wholesale distributors in 1960 went to those dealing chiefly in resilient floor tile (table 13).<sup>1/</sup>

Importers, to a greater extent than domestic producers of ceramic tile, distribute their product through resilient-floor-tile dealers

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<sup>1/</sup> Based on incomplete returns from a supplementary questionnaire sent to producers and importers. It should be noted that some distributors of ceramic tile also sell resilient tile, so the classification of a distributor by the producer or importer is, in part, arbitrary.

primarily because these dealers have found that domestic producers of ceramic tile prefer to distribute through their conventional channels-- the ceramic-tile distributors or the tile contractors.

The selection of the kind and make of tile for a particular building is generally made by the architect, who usually specifies whether it is to be domestic or imported; and if he specifies that it be domestic, he will name alternative suppliers. Therefore, the producers' and importers' sales promotion is directed more toward the architects than toward the tile contractors. In addition, producers advertise in consumer magazines. For most public buildings, domestic tile is specified, partly because delivery and service are more dependable, and partly because federally financed construction contracts usually contain a "Buy American" clause.

The tile contractor plays an important role in the tile industry because the skill and speed with which the tile is laid largely determine the customers' satisfaction with a particular make of tile. Most contractors prefer domestic tile because of the dependability of supplies. A contractor who runs short of an imported tile of a pattern not available in the importer's warehouse may be subject to costly penalties because he cannot finish the job on time.

#### Domestic producers

Sales by domestic producers to jobbers and distributors constituted the same proportion of total sales in 1960 as in 1955, but the proportion of sales to contractors at discount was considerably greater in 1960 than in 1955, as indicated in the following tabulation:

<u>Sales outlet</u>	<u>Percent of total sales</u>	
	<u>1955</u>	<u>1960</u>
Jobbers and distributors-----	39	39
Contractors, at discount-----	6	27
Contractors, other-----	54	33
Other, including exports-----	1	1
Total-----	<u>100</u>	<u>100</u>

Tile is sold to the jobber at prices 15 percent or more below those charged the contractor for small lots.<sup>1/</sup> This margin has to cover the jobber's selling costs, including costs of warehousing. Some of the large producers maintain warehouses in major markets, and the proportion of the industry's sales made through warehouses, rather than directly from the plant, increased from about 14 percent in 1955 to 19 percent in 1960 (table 14). Whereas 20 years ago tile contractors carried substantial stocks, today they usually depend on the producer, importer, or distributor to have stocks available at the plant or warehouse. With the substantial increase in the number of colors and patterns of tile, the suppliers have been obliged to increase their inventories.

Most of the large companies employ traveling salesmen who visit the major architects and tile contractors; there are probably 1,000 or more tile contractors in the United States. Some of the large contractors have showrooms where they display samples of both imported and domestic tile that they install. Jobbers usually sell wall tile as well as allied products, such as bathroom accessories, and frequently other wall- and floor-surfacing materials.

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<sup>1/</sup> Contractors get quantity discounts on large orders.

Producers sell mostly to customers who are not near competitors' plants, in order to avoid high freight equalization costs.

In order to maximize their returns per square foot, domestic producers prefer to sell directly to the contractor. Some domestic producers do not allow a jobber-importer to handle their line of domestic tile; and some of the jobbers who have been "bypassed" by the producers have gone into the importing business.

#### Importers

Importers of ceramic mosaic tile sell a much larger proportion of their tile to jobbers or distributors than do domestic producers (table 12). The following tabulation indicates the distribution of importers' sales by the type of outlet in 1955 and 1960:

<u>Sales outlet</u>	<u>Percent of total sales</u>	
	<u>1955</u>	<u>1960</u>
Jobbers and distributors-----	73	1/ 69
Contractors, at discount 2/-----	10	12
Contractors, other-----	16	13
Other, including retail outlets-----	1	6
Total-----	<u>100</u>	<u>100</u>

1/ About one-fifth of these sales are made to distributors of resilient floor tile, and the balance, to distributors that sell chiefly ceramic mosaic tile (table 13).

2/ Some large contractors import directly, and such tile as they install is not considered in this tabulation.

An increasing quantity of ceramic mosaic tile is being imported by contractors directly from the Japanese factory or exporter, for their own use.

Most of the regular tile importers carry some stocks in order to provide somewhat the same service that a tile contractor gets from the domestic producer. Importers' stocks are usually located at major ports of entry. However, about one-third of the importers carry no stocks, ordering from their foreign suppliers only on the basis of firm orders from their customers. Almost 40 percent of importers' sales of ceramic mosaic tile in 1960 was delivered on arrival at the dock or wharf (table 14).

#### Prices

All domestic producers and some importers publish descriptive sales material and pricelists on ceramic mosaic tile. The quoted prices are generally f.o.b. factory, warehouse, or wharf in the United States, with standard package charges included. Because additional labor is required to back mount tile, it is usually sold by domestic producers for 6 to 8 cents more per square foot than similar face mounted tile. Domestic producers usually give trade or quantity discounts, or both. Most domestic producers' terms of sale are 30 days net, with a cash discount of about 2 percent if payment is made within 15 days. In addition, domestic manufacturers often provide for freight equalization,<sup>1/</sup> which is based on railroad or water rates, or a combination of both. Importers do not have as well established a pattern of discounts or terms of sale as do domestic producers.

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<sup>1/</sup> The producer pays for transportation charges in excess of those on like shipments of the same class of tile from the producer nearest the purchaser.



The Commission obtained from both domestic producers and importers the net realized prices received for each of certain popular selected types, designs, and colors of ceramic mosaic tile sold to distributors and to contractors in October of the years 1955-60. The simple averages of these reported realized prices appear in table 15.

#### Price trends

After a general rise from 1955 through 1958, prices received by domestic producers for most of the selected types of tile were moderately lower in October 1960 than in October 1959. This decline was greater for domestic tile sold to contractors, which was priced higher than that sold to distributors. While the prices of the selected types of domestic unglazed tile sold to distributors and contractors have varied only slightly since 1957, the prices of the selected types of glazed porcelain tile have shown a pronounced downward trend.

Prices of imported tile have shown a general downward trend since 1955. The sharpest decline has been in the average price of glazed porcelain specialties (3/8-inch square, in mixed colors); such tile is not produced domestically. Between 1958 and 1960 the average price of this specialty tile sold to distributors by importers dropped by more than one-third. This appreciable decline may be due in part to the rapid rise in popularity of these small decorative tiles and the resulting intense competition among importers.

#### Comparative prices of domestic and imported tile

The margins by which the average realized prices to distributors of domestic unglazed tile (f.o.b. producer's plant or warehouse) exceeded

prices to distributors of similar imported tile (f.o.b. wharf or importer's warehouse) for these popular designs was about 19 cents per square foot in October 1960, while the price differential for one popular type of glazed porcelain tile was about 27 cents per square foot, as indicated in the following tabulation:<sup>1/</sup>

Description	: Domestic	: Imported
	: Cents per	: Cents per
	: sq.ft.	: sq.ft.
Unglazed porcelain:		
3/4-inch x 1-9/16-inch series, square edge:		
Spiral, white with black dot-----	45.8	27.0
Block random, light and dark green-----	51.1	31.4
1 inch or 1-1/16 inches square, cushion edge,		
medley, 3 colors-----	51.0	31.4
Glazed porcelain:		
1 inch or 1-1/16 inches square, 1 or 2 colors--	75.1	48.2

To determine the representativeness of the above differences by which the realized prices of domestic ceramic mosaic tile exceeded prices of similar imported tile, members of the Commission's staff interviewed tile contractors from four cities. These contractors' estimates of the average margin by which the realized prices of domestic tile exceeded those of comparable imports varied from 14 to 22 cents per square foot. All of these contractors laid both domestic and imported tile, and were familiar with competitive price quotations.

<sup>1/</sup> There is a general consensus in the trade that the quality of the imported ceramic mosaic tile is, on the average, the same as that of the ceramic mosaic tile produced domestically; however, the quality of the selected designs for which individual importers and producers reported net realized prices may have differed somewhat.

It is generally agreed by the users of ceramic mosaic tile that the quality of the ceramic mosaic tile currently being imported is equal to that of comparable tile produced domestically. However, domestic producers can give more prompt and dependable service on deliveries, and usually have a somewhat wider assortment of well-matched colors. Thus, a builder or a tile contractor is usually willing to pay somewhat more per square foot for domestic tile than for imported tile of the same specification. The time advantage in delivery by the domestic producer often amounts to 2 months or more, assuming that neither the domestic producer nor the importer can fill the order from stock. Furthermore, grade certification, which is sometimes required on tile contracts, is readily available from domestic producers but can rarely be supplied by importers.

#### Employment and Wages in Plants Producing Ceramic Mosaic Tile

Employment in the production of ceramic mosaic tile increased irregularly from 2,066 workers in 1955 to 2,246 in 1959 and then declined to 2,097 in 1960 (table 16).<sup>1/</sup> The slight dip in employment in 1957 and 1958 occurred because of the recession in the last half of 1957 and the first half of 1958. The man-hours spent by production and related workers in producing ceramic mosaic tile in 1960 were 5 percent less than in 1955.

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<sup>1/</sup> Computed by allocating to the production of ceramic mosaic tile a proportion of all production and related workers equivalent to the ratio of man-hours worked on such tile to man-hours worked on all products.

In the period 1955-60, average annual employment of production and related workers engaged in producing ceramic mosaic tile accounted for 49 to 58 percent of total employment of such workers engaged in the manufacture of all products made in the 15 plants producing ceramic mosaic tile.

Average wages of production and related workers making ceramic mosaic tile increased steadily from \$1.62 per hour in 1955 to \$1.95 in 1960. Several of the plants are located in relatively high-wage industrial areas. The average hourly earnings of workers producing ceramic mosaic tile are generally lower than those for workers making wall tile, because much of the labor cost in the production of mosaic tile is in the mounting operation, done almost entirely by women; wall tile is not mounted. These women receive a lower rate of pay, on the average, than the employees (mostly men) in the other parts of the plants.

Average hourly wages of production and related workers making ceramic mosaic tile have varied appreciably from plant to plant, having ranged from \$1.36 per hour to \$2.16 per hour in 1960.

#### Profit-and-Loss Experience of Domestic Producers

Questionnaires were sent to all 13 domestic concerns<sup>1/</sup> that produce ceramic mosaic tile, requesting data on their profit-and-loss experience for the years 1955-60. Eleven of the concerns,<sup>2/</sup> which together accounted

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<sup>1/</sup> One of the thirteen concerns produced ceramic mosaic tile in three plants, two of which were operated by subsidiary corporations.

<sup>2/</sup> Two concerns which together accounted for a very small portion of the total domestic production of ceramic mosaic tile were unable to furnish usable profit-and-loss data on their tile operations. For both of those concerns, sales of ceramic mosaic tile accounted for a small share of their total sales of all products in 1960.

for virtually all of the domestic production of ceramic mosaic tile during 1955-60, furnished usable profit-and-loss data. The data furnished by these concerns are summarized in table 17. Five of the eleven concerns produced other products in addition to ceramic mosaic tile in the plants in which such tile is made. These multiproduct concerns reported profit-and-loss data on ceramic mosaic tile distinct from the profit-and-loss data on their other products. For the other six concerns, ceramic mosaic tile accounted for virtually their entire output.

Table 17 shows for the 11 concerns for 1955-60<sup>1/</sup> their aggregate sales; cost of sales; gross profits; administrative, research, and selling expenses; net operating profits; and ratios of net operating profits to net sales.

The aggregate net sales of ceramic mosaic tile by 10 of the 11 concerns were \$18.8 million in 1955 and \$19.7 million in 1956. The net sales of such tile by the 11 concerns totaled \$18.3 million in 1957, \$19.7 million in 1958, \$22.0 million in 1959, and \$21.0 million in 1960.

The ratio of aggregate net operating profits to aggregate net sales for the 10 concerns was 13.0 percent for 1955 and 11.8 percent for 1956; for the 11 concerns it was 3.8 percent for 1957, 7.4 percent for 1958, 7.3 percent for 1959, and 4.8 percent for 1960. One concern reported a net operating loss for 1955 and 1956; three reported net operating losses for 1957 and 1958; two reported net operating losses for 1959, and four reported net operating losses for 1960.

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<sup>1/</sup> One of the eleven concerns commenced operations during 1956 and furnished profit-and-loss data for 1957-60 only. This concern accounted for a very small part of the total domestic production of ceramic mosaic tile in 1957-60. The profit-and-loss data shown in table 17 are for 10 concerns for 1955-56 and for 11 concerns for 1957-60.

## Summary

The information obtained in this investigation shows that whereas between 1955 and 1960 imports of ceramic mosaic tile increased 455 percent--from 5.1 to 28.3 million square feet--over the same period the quantities both produced and sold by domestic producers declined; that imports supplied 35 percent of U.S. consumption in 1959, and 42 percent in 1960, compared with 13 percent in 1955; that although domestic consumption reached a record high of 59.8 million square feet in 1960, sales in that year by domestic producers showed no appreciable expansion even over 1957 when building construction was in a slump; that producers' yearend inventories increased steadily and more than doubled in the period 1955-60, such inventories at the end of 1960 being equivalent to 31 percent of domestic producers' sales in that year compared with 12 percent in 1955; that total man-hours of production and related workers engaged in the manufacture of ceramic mosaic tile at U.S. plants were lower in 1960 than in any of the 5 preceding years; that the bulk of the imports are comparable to, and directly competitive with, the bulk of the tile produced domestically; that the sale of large and rapidly increasing quantities of imported tile at prices substantially less than prices for comparable domestic tile has seriously weakened the price structure in the U.S. market and made it virtually impossible for the domestic industry to reflect rising wage and materials costs in pricing; that domestic producers are receiving substantially fewer dollars to maintain operations, reward investment, and confront foreign competition

since their aggregate net operating profit before income taxes declined 58 percent from \$2,431,000 in 1955 to \$1,014,000 in 1960; that the rapid intensification of import competition has also significantly reduced the ratio of aggregate net operating profit before income taxes to aggregate net sales from 13 percent in 1955 to 4.8 percent in 1960; and that the profit ratio for 1960 does not fully reflect the impact of the large imports in that year on the profit position of the domestic industry because the sale of sizable inventories now accumulated by importers is bound to further depress sales and profits of domestic producers.

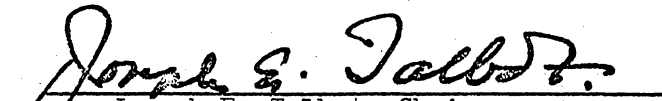
In view of the foregoing considerations, the Commission concludes that ceramic mosaic tile--with certain exceptions--is being imported in such increased quantities, both actual and relative, as to cause serious injury to the domestic industry producing like products. The exceptions are ceramic mosaic tile specialties--previously noted--and very high priced ceramic mosaic tile.<sup>1/</sup> Under the Commission's recommendation, the very high priced mosaic tile would continue to be dutiable at the

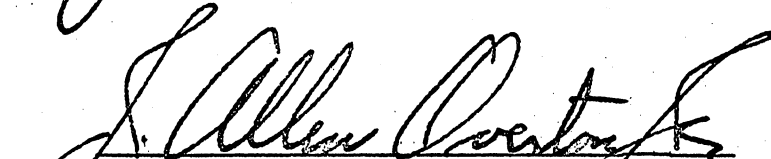
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<sup>1/</sup> The excepted mosaic tile specialties and very high priced mosaic tile are not significant in U.S. production.

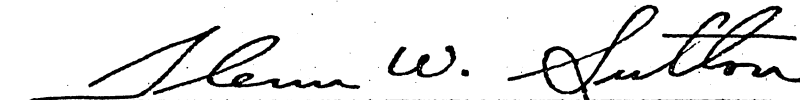
present rate of  $25\frac{1}{2}$  percent ad valorem for the reason that the increase in duty on tile valued at more than 40 cents per square foot would decline gradually until it reached zero at approximately 94 cents per square foot.

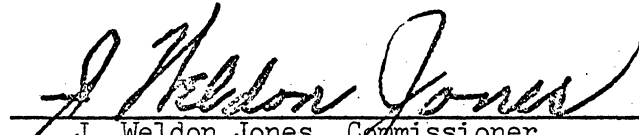
Respectfully submitted,

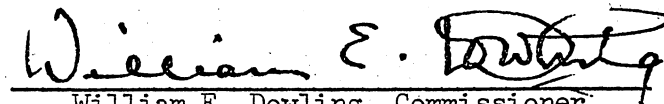
  
Joseph E. Talbot, Chairman

  
J. Allen Overton, Jr., Vice Chairman

  
Walter R. Schreiber, Commissioner

  
Glenn W. Sutton, Commissioner

  
J. Weldon Jones, Commissioner

  
William E. Dowling, Commissioner



STATISTICAL APPENDIX



Table 1.--Ceramic mosaic tile: U.S. rates of duty under the Tariff Act of 1930, as modified to May 1, 1961

(Cents per square foot; percent ad valorem)

Tariff paragraph and description	Tariff Act of 1930		
	Statutory rate <sup>1/</sup>	Trade-agreement modification	
		Rate	Effective date and basis of change <sup>2/</sup>
Par. 202(a):			
Tiles, unglazed, glazed, ornamented, hand painted, enameled, vitrified, semivitrified, decorated, encaustic, ceramic mosaic, flint, spar, embossed, gold decorated, grooved or corrugated, and all other earthen tiles and tiling by whatever name known (except pill tiles and tiles wholly or in part of cement):			
Ceramic mosaic tiles:			
Valued at not more than 40 cents per square foot.	10¢; min. 50%; max. 70%.	10¢; min. 30%; max. 70%. <sup>3/</sup>	1-1-48; GATT.
		5¢; min. 25%; max. 35%.	6-6-51; GATT.
		4-3/4¢; min. 23 1/2%; max. 33%.	6-30-56; GATT.
		4 1/2¢; min. 22 1/2%; max. 31 1/2%.	6-30-57; GATT.
		4 1/4¢; min. 21%; max. 30%.	6-30-58; GATT.
Valued at more than 40 cents per square foot.	60%	30%	1-1-48; GATT.
		28 1/2%	6-30-56; GATT.
		27%	6-30-57; GATT.
		25 1/2%	6-30-58; GATT.

<sup>1/</sup> That originally provided for in the Tariff Act of 1930. This rate applies to products of Communist-dominated countries or areas designated by the President in accordance with sec. 5 of the Trade Agreements Extension Act of 1951, as amended.

<sup>2/</sup> The date shown represents that of the trade agreement in which the modified rate was negotiated; GATT refers to the General Agreement on Tariffs and Trade.

<sup>3/</sup> The rate of duty on ceramic mosaic tiles valued at not more than 28-4/7 cents per square foot was 7 cents per square foot but not less than 35 percent or more than 49 percent ad valorem from Jan. 1, 1948, to June 6, 1951. This rate was established to avoid increasing the Cuban margin of preference.

Table 2.--Ceramic mosaic tile: U.S. production by type of tile, 1955-60

Type of tile	1955	1956	1957	1958	1959	1960
	Quantity (1,000 square feet)					
Glazed specialties-----	-	-	-	2	32	34
Other glazed tile <sup>1/</sup> -----	2,699	2,823	2,926	3,080	3,738	3,946
Unglazed standard tile <sup>1/</sup> -----	32,873	35,318	32,161	33,030	36,036	31,525
Unglazed seconds-----	194	151	130	168	104	88
Total, all types-----	35,766	38,292	35,217	36,280	39,910	35,593
	Percent of all types					
Glazed specialties-----	-	-	-	<sup>2/</sup>	0.1	0.1
Other glazed tile <sup>1/</sup> -----	7.5	7.4	8.3	8.5	9.4	11.1
Unglazed standard tile <sup>1/</sup> -----	92.0	92.2	91.3	91.0	90.3	88.6
Unglazed seconds-----	.5	.4	.4	.5	.2	.2
Total, all types-----	100.0	100.0	100.0	100.0	100.0	100.0

<sup>1/</sup> Small amounts of "Other glazed tile" produced by 1 company were not separately reported for 1955-59, and are included in "Unglazed standard tile" for those years.

<sup>2/</sup> Less than 0.05 percent.

Source: Compiled from reports submitted to the U.S. Tariff Commission by domestic producers.

Table 3.--Ceramic mosaic tile: U.S. producers' sales, by type of tile, 1955-60

Type of tile	1955	1956	1957	1958	1959	1960
Quantity (1,000 square feet)						
Glazed specialties 1/---	-	-	-	1	31	33
Other glazed tile 2/---	2,673	2,805	2,744	2,874	3,476	3,659
Unglazed standard tile 2/-----	33,189	33,743	31,428	32,485	35,552	30,911
Unglazed seconds-----	192	90	74	90	99	83
Total-----	36,054	36,638	34,246	35,450	39,158	34,686
Value (1,000 dollars)						
Glazed specialties 1/---	-	-	-	4	50	58
Other glazed tile 2/---	1,733	1,952	1,737	1,907	2,625	2,742
Unglazed standard tile 2/-----	16,960	17,790	16,521	17,742	19,647	17,963
Unglazed seconds-----	60	32	24	31	38	33
Total-----	18,753	19,774	18,282	19,684	22,360	20,796
Unit value (per square foot)						
Glazed specialties 1/---	-	-	-	\$4.000	\$1.613	\$1.758
Other glazed tile 2/---	\$0.648	\$0.696	\$0.633	.664	.755	.749
Unglazed standard tile 2/-----	.511	.527	.526	.546	.553	.582
Unglazed seconds-----	.312	.356	.324	.344	.384	.398
Average-----	.520	.540	.534	.555	.571	.600

1/ Specialties are ceramic mosaic tile either mounting more than 300 pieces per square foot or with faces bounded by other than straight lines.

2/ Small amounts of "Other glazed tile" produced by 1 company were not separately reported for 1955-59, and are included in "Unglazed standard tile" for those years.

Source: Compiled from data submitted to the U.S. Tariff Commission by domestic producers.

Table 4.--Ceramic mosaic tile: Producers' sales and yearend inventories of glazed and unglazed tile, 1955-60

(Quantity in thousands of square feet)

Type of tile	1955	1956	1957	1958	1959	1960
Glazed:						
Sales <sup>1/</sup> -----	2,673	2,805	2,744	2,875	3,507	3,692
Inventory-----	180	187	445	620	934	844
Percent of sales----	6.7	6.7	16	22	27	23
Unglazed:						
Sales <sup>1/</sup> -----	33,381	33,833	31,502	32,575	35,651	30,994
Inventory-----	4,098	6,043	7,016	8,163	8,521	9,749
Percent of sales----	12	18	22	25	24	31
All types:						
Sales-----	36,054	36,638	34,246	35,450	39,158	34,686
Inventories-----	4,278	6,230	7,461	8,783	9,455	10,593
Percent of sales----	12	17	22	25	24	31
Mounted:						
Inventory-----	1,909	3,153	3,815	4,719	5,007	5,480
Percent of sales of :						
all types-----	5.3	8.6	11	13	13	16
Unmounted:						
Inventory-----	2,369	3,077	3,646	4,064	4,448	5,113
Percent of sales of :						
all types-----	6.6	8.4	11	12	11	15

<sup>1/</sup> Small amounts of glazed tile sold by 1 company were not separately reported in 1955-59 and were included with unglazed tile.

Source: Compiled from data submitted to the U.S. Tariff Commission by the domestic producers.

Table 5. --Ceramic mosaic tile: U.S. imports for consumption by statistical classes, 1954-60

Year	Total, all classes		Ceramic mosaic tile		Other unglazed tile 1/	
	Valued not over 40¢ per square foot	Valued over 40¢ per square foot	Valued not over 40¢ per square foot	Valued over 40¢ per square foot	Valued not over 40¢ per square foot	Valued over 40¢ per square foot
			Quantity (1,000 square feet)			
1954	1,951	32	1,321	22	630	10
1955	4,997	85	2,995	58	2,002	27
1956	9,064	213	6,084	157	2,980	56
1957	7,392	308	5,312	255	2,080	53
1958	11,823	578	8,524	503	3,299	75
1959	23,600	1,020	18,672	871	4,928	149
1960	27,414	923	17,718	798	9,696	125
			Foreign value (1,000 dollars)			
1954	347	25	227	18	120	7
1955	959	63	591	41	368	22
1956	1,793	130	1,212	93	581	37
1957	1,451	217	1,074	170	377	47
1958	2,234	385	1,671	339	563	46
1959	4,515	625	3,645	529	870	96
1960	5,125	532	3,543	460	1,582	72
			Unit foreign value (per square foot)			
1954	\$0.178	\$0.781	\$0.171	\$0.818	\$0.190	\$0.700
1955	.192	.741	.197	.707	.184	.815
1956	.198	.610	.199	.592	.195	.661
1957	.196	.705	.202	.667	.181	.887
1958	.189	.666	.196	.674	.171	.613
1959	.191	.613	.195	.607	.177	.644
1960	.187	.576	.200	.576	.163	.576

1/ This classification, upon partial analysis, was found to consist predominantly of ceramic mosaic tile. Information obtained from interviews with a customs examiner and with importers, as well as the Japanese export statistics (table 7), supports this conclusion.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6.--Ceramic mosaic tile: U.S. imports for consumption, 1/  
by principal sources, 1954-60

Year	All countries	Japan	Italy	Spain	All other
Quantity (1,000 square feet)					
1954	1,983	1,321	279	108	275
1955	5,082	3,171	506	1,063	342
1956	9,277	5,690	872	2,216	499
1957	7,700	5,532	1,142	655	371
1958	12,401	9,191	1,671	428	1,111
1959	24,620	19,025	2,279	619	2,697
1960	28,337	22,193	4,371	543	1,230
Foreign value (1,000 dollars)					
1954	372	212	64	25	71
1955	1,022	549	133	236	104
1956	1,923	1,026	258	485	154
1957	1,668	971	422	148	127
1958	2,619	1,592	624	83	320
1959	5,140	3,481	753	110	796
1960	5,657	4,202	1,016	96	343
Unit foreign value (per square foot)					
1954	\$0.188	\$0.160	\$0.229	\$0.231	\$0.259
1955	.201	.173	.263	.222	.304
1956	.207	.180	.296	.219	.309
1957	.217	.176	.370	.226	.342
1958	.211	.173	.373	.194	.288
1959	.209	.183	.330	.178	.295
1960	.200	.189	.232	.177	.279

1/ Includes the import classification in official statistics "Other than ceramic mosaic/ unglazed tile," which, upon partial analysis, was found to consist predominantly of ceramic mosaic tile. Information obtained from interviews with a customs examiner and importers, as well as the official Japanese export statistics (table 7), supports this conclusion.

2/ Includes 1,521 thousand square feet, valued at \$472 thousand, with a unit value of \$0.310 per square foot, from the United Kingdom.

Source: Compiled from official statistics of the U.S. Department of Commerce.



Table 7.--Ceramic mosaic tile: U.S. imports from Japan <sup>1/</sup> and Japanese exports to the United States, 1955-60

Year	Quantity		Foreign value		Unit foreign value	
	U.S. imports	Japanese exports	U.S. imports	Japanese exports	U.S. imports	Japanese exports
	<u>1,000</u> <u>sq. ft.</u>	<u>1,000</u> <u>sq. ft.</u>	<u>1,000</u> <u>dollars</u>	<u>1,000</u> <u>dollars</u>	<u>Per</u> <u>sq. ft.</u>	<u>Per</u> <u>sq. ft.</u>
1955-----	3,171	3,458	549	618	\$0.173	\$0.179
1956-----	5,690	5,624	1,026	940	.180	.167
1957-----	5,532	6,421	971	1,085	.176	.169
1958-----	9,191	10,642	1,592	1,808	.173	.170
1959-----	19,025	22,650	3,481	3,975	.183	.174
1960-----	22,193	24,698	4,202	5,033	.189	.204

<sup>1/</sup> Includes the import classification in official statistics "Other /than ceramic mosaic/ unglazed tile," which, upon partial analysis, was found to consist predominantly of ceramic mosaic tile. Information obtained from interviews with a customs examiner and importers, as well as the official Japanese export statistics, supports this conclusion.

Source: U.S. imports, from statistics of the Bureau of the Census; Japanese export statistics, as reported in Despatch from American consulate, Nagoya, 1960.

Table 8.--Ceramic mosaic tile: Imports reported by U.S. importers, by type of tile, 1957-60 <sup>1/</sup>

Type of tile	1957	1958	1959	1960
Coverage of officially reported imports-----percent	73	66	72	76
Quantity (1,000 square feet)				
Glazed specialties <sup>2/</sup> -----	167	346	1,829	4,038
Other glazed tile-----	1,278	1,886	3,421	4,056
Unglazed tile-----	4,174	6,014	12,414	13,291
Total, all types-----	5,619	8,246	17,664	21,385
Percent of all types				
Glazed specialties <sup>2/</sup> -----	3.0	4.2	10.3	18.9
Other glazed tile-----	22.7	22.9	19.4	19.0
Unglazed tile-----	74.3	72.9	70.3	62.1
Total, all types-----	100.0	100.0	100.0	100.0

<sup>1/</sup> Data submitted by the importers for 1955 and 1956 were not adequate for analysis.

<sup>2/</sup> Tile mounting more than 300 pieces per square foot or with faces bounded by other than straight edges.

Source: Compiled from reports submitted to the U.S. Tariff Commission by the importers.

Table 9.--Ceramic mosaic tile: U.S. importers' sales and yearend inventories, by type of tile, 1957-60 <sup>1/</sup>

Item	1957	1958	1959	1960
Glazed specialties:				
Quantity sold-----1,000 sq. ft.--:	132	253	1,276	3,235
Inventory on Dec. 31-----do.-----:	20	41	380	834
Ratio to sales-----percent--:	15	16	30	26
Other glazed tile:				
Quantity sold-----1,000 sq. ft.--:	1,103	1,766	2,766	3,514
Inventory on Dec. 31-----do.-----:	193	341	754	1,188
Ratio to sales-----percent--:	17	19	27	34
Unglazed tile:				
Quantity sold-----1,000 sq. ft.--:	3,805	5,274	10,304	11,223
Inventory on Dec. 31-----do.-----:	702	936	2,761	3,571
Ratio to sales-----percent--:	18	18	27	32
All types:				
Quantity sold-----1,000 sq. ft.--:	5,040	7,293	14,346	17,972
Inventory on Dec. 31-----do.-----:	915	1,318	3,895	5,593
Ratio to sales-----percent--:	18	18	27	31

<sup>1/</sup> Data submitted by the importers for 1955 and 1956 were not adequate for analysis. Importers reporting both sales and inventories accounted for 73 percent of the imports in 1957, 66 percent in 1958, 70 percent in 1959, and 72 percent in 1960.

Source: Compiled from reports submitted to the U.S. Tariff Commission by the importers.

Table 10.--Ceramic mosaic tile: U.S. consumption, sales, exports of domestic merchandise, and imports for consumption, 1954-60

Year	U.S. consumption 1/		Sales by U.S. producers 2/	Domestic exports 3/	Estimated sales by U.S. importers 4/		Ratio of sales of U.S. imports to U.S. consumption 5/			
	Including specialties	Excluding specialties			Including specialties	Excluding specialties	Including specialties	Excluding specialties	Percent	Percent
1954	30,357	30,357	28,556	6/	1,983	1,983	6.5	6.5		
1955	40,511	40,511	36,054	133	5,082	5,082	12.5	12.5		
1956	44,781	44,781	36,638	238	9,277	9,277	20.7	20.7		
1957	40,929	40,729	34,246	217	6,900	6,700	16.9	16.5		
1958	46,254	45,854	35,450	196	11,000	10,600	23.7	23.1		
1959 7/	59,644	57,644	39,158	214	20,700	18,700	34.7	32.4		
1960 7/	59,758	54,958	34,686	128	25,200	20,400	42.2	37.1		

1/ Sales by U.S. producers, less domestic exports, plus estimated sales by U.S. importers (except for 1954-56, as noted in other columns).

2/ As reported to the U.S. Tariff Commission by U.S. producers, except for 1954, which is U.S. production estimated by the industry. (Includes insignificant amounts of specialties in 1958-60.)

3/ As reported to the U.S. Tariff Commission by U.S. producers.

4/ Computed from data on sales of ceramic mosaic tile by importers that reported to the Commission, assuming that their coverage of total sales of such tile was the same as their coverage of total imports, namely 73.0 percent for 1957, 66.5 percent for 1958, 71.7 percent for 1959, and 75.5 percent for 1960, and adjusted for imports consumed by importers. Because importers' coverage of total imports for 1954-56 was not adequate to warrant an estimate of sales, total imports were used for these years since they closely approximated sales.

5/ Because import figures are used in 1954-56 in place of sales of imported tile, the percentage ratios for those years probably are slightly overstated.

6/ Data for 1954 were not requested.

7/ Preliminary.

Source: Compiled and computed from data reported to the U.S. Tariff Commission by U.S. producers and importers.

Table 11.--Value of public and private nonfarm residences and buildings put in place in the United States, production index of building materials, U.S. production of all floor and wall tile, and U.S. production and consumption of ceramic mosaic tile, 1955-60

Year	Value of nonfarm residences and buildings put in place <sup>1/</sup>		Production index of building materials (1947-49=100)		Production of all floor and wall tile		Ceramic mosaic tile	
	Million dollars	sq. ft.	Million sq. ft.	sq. ft.	Domestic production	Including specialties	Domestic consumption	Excluding specialties
1955	24,572	233.0	132.5	233.0	35.8	40.5	2/ 40.5	2/ 40.5
1956	23,484	251.4	133.6	251.4	38.3	44.8	2/ 44.8	2/ 44.8
1957	23,284	212.1	125.7	212.1	35.2	40.9	40.7	40.7
1958	23,452	221.8	124.9	221.8	36.3	46.2	45.9	45.9
1959	27,465	258.6	135.0	258.6	39.9	59.6	57.6	57.6
1960	26,070	241.9	130.3	241.9	35.6	59.8	55.0	55.0
Percent of increase (+) or decrease (-) 1960 over 1955	+6.1	+3.8	-1.7	+3.8	-0.6	+47.5	+35.7	+35.7

<sup>1/</sup> In constant (1947-49) dollars.

<sup>2/</sup> Data submitted by importers for 1955 and 1956 were not adequate for separation of specialties and other tile. However, imports of specialties prior to 1957 were relatively insignificant.

Source: Value of construction, production index of building materials, and production of all floor and wall tile, from Construction Review (U.S. Department of Commerce), March 1961; production and consumption of ceramic mosaic tile, compiled by the U.S. Tariff Commission (see tables 2 and 10).

Table 12.--Ceramic mosaic tile: Sales by U.S. producers and importers, by type of sales outlet, 1955 and 1960

Type of sales outlet	Producers' <sup>1</sup>		Importers' <sup>1</sup>	
	sales		sales	
	1955	1960	1955 <sup>1/</sup>	1960
	Quantity (1,000 square feet)			
Jobbers and distributors-----	12,175	11,540	2,392	12,187
Contractors at discount-----	1,833	7,963	315	2,124
Other sales to contractors-----	16,718	9,783	517	2,212
Retail outlets-----	-	-	26	448
Foreign buyers (exports)-----	215	162	-	-
All other outlets-----	63	36	-	622
Total sales <sup>2/</sup> -----	31,004	29,484	3,250	17,593
	Percent of total			
Jobbers and distributors-----	39.3	39.1	73.6	69.3
Contractors at discount-----	5.9	27.0	9.7	12.1
Other sales to contractors-----	53.9	33.3	15.9	12.6
Retail outlets-----	-	-	.8	2.5
Foreign buyers (exports)-----	.7	.5	-	-
All other outlets-----	.2	.1	-	3.5
Total sales-----	100.0	100.0	100.0	100.0

<sup>1/</sup> Because the data submitted by importers reporting to the Tariff Commission accounted for only 27 percent of 1955 imports, these figures may not be representative; importers reporting sales in 1960 by type of sales outlet accounted for 71 percent of total imports in that year.

<sup>2/</sup> Owing to the fact that all respondents did not reply to all questions, these totals may not agree with total sales reported in other tables.

Source: Compiled from reports submitted to the U.S. Tariff Commission by the domestic producers and the importers.

Table 13.--Ceramic mosaic tile: Distribution of sales by 12 U.S. producers and by 16 U.S. importers to distributors other than contractors, by type of sales outlet, 1960 <sup>1/</sup>

Type of tile and type of sales outlet	Producers' sales		Importers' sales	
	Quantity	Percent of total	Quantity	Percent of total
	1,000 sq.ft.		1,000 sq.ft.	
<b>Unglazed tile:</b>				
Ceramic tile distributors	8,811	88.0	5,836	76.4
Resilient floor covering distributors	705	7.0	1,436	18.8
Hobby supply distributors	2	2/	-	-
Tile kit and tile article manufacturers	11	.1	-	-
Retail outlets	2	2/	111	1.5
Other distributors	3/ 477	4.8	250	3.3
Total	10,008	100.0	7,633	100.0
<b>Glazed tile:</b>				
Ceramic tile distributors	1,185	86.0	1,738	57.0
Resilient floor covering distributors	183	13.3	617	20.2
Hobby supply distributors	-	-	310	10.2
Tile kit and tile article manufacturers	-	-	196	6.4
Retail outlets	10	.7	70	2.3
Other distributors	-	-	120	3.9
Total	5/ 1,378	100.0	3,051	100.0
<b>Glazed and unglazed tile:</b>				
Ceramic tile distributors	9,996	87.8	7,574	70.9
Resilient floor covering distributors	888	7.8	2,053	19.2
Hobby supply distributors	2	2/	310	2.9
Tile kit and tile article manufacturers	11	.1	196	1.8
Retail outlets	12	.1	181	1.7
Other distributors	477	4.2	370	3.5
Total	11,386	100.0	10,684	100.0

<sup>1/</sup> Total sales shown in this table represent for producers 97 percent, and for importers about 80 percent, of their total sales in 1960 to those other than contractors. Importers reporting sales by type of sales outlet accounted for 71 percent of the imports of ceramic mosaic tile in 1960. <sup>2/</sup> Less than 0.05 percent. <sup>3/</sup> Chiefly sales to other tile manufacturers. <sup>4/</sup> Includes sales to lumber yards. <sup>5/</sup> Represents sales of only 2 of the 5 producers of glazed tile; sales of glazed tile by 2 other producers are included in figures for unglazed tile.

Source: Compiled from data submitted to the U.S. Tariff Commission by the producers and the importers.

Table 14.--Ceramic mosaic tile: Sales by U.S. producers and by U.S. importers according to place of shipment, 1955 and 1960

Producers' and importers' place of shipment	Quantity shipped		Percent of total	
	1955	1960	1955	1960
	<u>1,000</u> sq.ft.	<u>1,000</u> sq.ft.		
Domestic producers:				
Plant site-----	30,766	28,234	85.3	81.4
Warehouse, other than at plant-----	5,288	6,452	14.7	18.6
Total sales <u>1/</u> -----	<u>36,054</u>	<u>34,686</u>	<u>100.0</u>	<u>100.0</u>
Importers:				
Wharf or pier-----	<u>2/</u> 1,756	6,667	<u>2/</u> 54.0	38.1
Warehouse-----	<u>2/</u> 1,494	10,842	<u>2/</u> 46.0	61.9
Total sales <u>1/</u> -----	<u>3,250</u>	<u>17,509</u>	<u>100.0</u>	<u>100.0</u>

1/ Owing to the fact that all respondents did not reply to all questions, total shipments may not agree with total sales reported in other tables.

2/ Because the data submitted by importers reporting to the Tariff Commission accounted for only 27 percent of 1955 imports, these figures may not be representative; importers reporting sales in 1960 by place of shipment accounted for 70 percent of total imports in that year.

Source: Compiled from reports submitted to the U.S. Tariff Commission by the domestic producers and the importers.



Table 15.--Ceramic mosaic tile: Average net realized prices<sup>1/</sup> received by producers and by importers for tile of specified designs sold to distributors and to contractors in October 1955-60

Type of purchaser and date	Unglazed porcelain										Seconds of block random, domestic <sup>3/</sup>			
	3/4" x 1-9/16" series, square edge					1" or 1-1/16" square, cushion edge, medley, 3-color blend								
	Spiral, white, with black dot		Block random, light and dark green		Domestic	Imported	Domestic		Imported					
Distributors, in October--														
1955	44.0	2/	49.8	2/	49.5	-	-	-	-	-	37.7			
1956	43.4	29.3	49.8	32.2	49.5	-	-	-	-	-	37.7			
1957	44.3	26.7	50.0	31.1	50.4	-	-	-	-	-	36.8			
1958	45.6	27.8	50.8	31.1	50.8	35.2	37.4	35.2	37.4	35.2	37.4			
1959	45.9	27.2	51.1	32.0	51.4	34.5	36.8	34.5	36.8	34.5	36.8			
1960	45.8	27.0	51.1	31.4	51.0	31.4	32.9	31.4	32.9	31.4	32.9			
Contractors, in October--														
1955	42.2	39.1	55.5	43.3	56.5	-	-	-	-	-	42.0			
1956	48.9	38.2	55.4	40.5	56.2	-	-	-	-	-	41.9			
1957	49.0	35.3	54.9	39.1	56.4	-	-	-	-	-	40.9			
1958	50.1	34.0	55.5	37.4	56.5	42.6	40.7	42.6	40.7	42.6	40.7			
1959	49.7	34.8	55.1	38.1	54.7	42.6	40.0	42.6	40.0	42.6	40.0			
1960	48.7	33.7	54.7	37.3	54.5	37.6	36.2	37.6	36.2	37.6	36.2			
	Unglazed porcelain--Con.													
	1-1/16" x 2-3/16" series, cushion edge 1/4"					Block random, 1 or 2 colors					1" or 1-1/16" square edge, 1 or 2 colors		3/8" square edge, mixed colors 5/	
	Spiral, white with black dot, domestic		Block random, light and dark green, domestic		Domestic	Imported	Domestic		Imported		Domestic		Imported	
Distributors, in October--														
1955	2/	50.7	2/	47.7	2/	47.7	2/	81.8	2/	81.8	2/	72.3	2/	47.0
1956	2/	50.7	2/	45.2	2/	45.2	2/	81.8	2/	81.8	2/	55.2	2/	72.3
1957	2/	52.7	2/	44.5	2/	44.5	2/	76.9	2/	76.9	2/	53.3	2/	54.8
1958	48.1	53.6	2/	42.6	2/	42.6	2/	75.1	2/	75.1	2/	48.2	2/	47.0
1959	48.0	51.3	2/	42.0	2/	42.0	2/	75.1	2/	75.1	2/	48.2	2/	47.0
1960	48.0	51.3	2/	42.0	2/	42.0	2/	75.1	2/	75.1	2/	48.2	2/	47.0
Contractors, in October--														
1955	2/	58.7	2/	57.5	2/	57.5	2/	95.1	2/	95.1	2/	61.0	2/	58.8
1956	2/	58.6	2/	53.6	2/	53.6	2/	94.6	2/	94.6	2/	62.6	2/	58.8
1957	2/	61.2	2/	55.8	2/	55.8	2/	86.4	2/	86.4	2/	58.5	2/	58.8
1958	52.7	60.2	2/	61.4	2/	61.4	2/	60.7	2/	60.7	2/	58.5	2/	58.8
1959	52.7	58.5	2/	51.1	2/	51.1	2/	60.7	2/	60.7	2/	58.5	2/	58.8
1960	54.5	59.2	2/	51.1	2/	51.1	2/	60.7	2/	60.7	2/	58.5	2/	58.8

1/ Simple average of prices reported by producers f.o.b. plant or warehouse and importers f.o.b. wharf or warehouse.  
<sup>2/</sup> Only 1 firm reported prices.  
<sup>3/</sup> No imported tile was sold as seconds.  
<sup>4/</sup> Prices were reported by only 1 importer, so data are shown for domestic tile only.  
<sup>5/</sup> This tile is not made by domestic producers.

Source: Reports submitted to the U.S. Tariff Commission by the domestic producers and the importers.

Table 16. --Employment of all workers and employment, total man-hours, and wages of all production and related workers in U.S. plants producing ceramic mosaic tile and of those workers engaged only in making such tile, 1955-60

Item	1955	1956	1957	1958	1959	1960
All products:						
All employees-----average number--:	4,872	5,212	4,618	4,669	4,936	4,337
Production and related workers:						
Average number-----	4,242	4,487	3,891	3,876	4,121	3,590
Man-hours worked-----1,000 hours--:	8,968	9,104	7,610	7,570	8,344	7,072
Wages paid-----1,000 dollars--:	15,144	16,082	13,761	14,018	15,998	13,848
Average hourly wage-----	\$1.69	\$1.77	\$1.81	\$1.85	\$1.92	\$1.96
Ceramic mosaic tile:						
Production and related workers:						
Average number $\frac{1}{2}$ -----	2,066	2,212	2,144	2,190	2,246	2,097
Man-hours worked-----1,000 hours--:	4,365	4,491	4,194	4,277	4,547	4,131
Wages paid-----1,000 dollars--:	7,092	7,610	7,332	7,666	8,525	8,061
Average hourly wage-----	\$1.62	\$1.69	\$1.75	\$1.79	\$1.87	\$1.95

$\frac{1}{2}$  Computed by allocating to the production of ceramic mosaic tile a proportion of all production and related workers equivalent to the ratio of man-hours worked on such tile to man-hours worked on all products in plants producing mosaic tile.

Source: Reports submitted to the U.S. Tariff Commission by the domestic producers.

Table 17.--Profit-and-loss experience of 11 U.S. producers <sup>1/</sup> on their ceramic mosaic tile operations, 1955-60

Item	1955	1956	1957	1958	1959 <sup>2/</sup>	1960
Net sales-----1,000 dollars--	18,764	19,698	18,285	19,734	22,004	21,041
Cost of sales-----do-----	13,243	13,896	14,120	14,378	16,046	15,593
Gross profit-----do-----	5,521	5,802	4,165	5,356	5,958	5,448
Administrative, research, and selling expense-----do-----	3,090	3,480	3,475	3,898	4,353	4,434
Net operating profit before income taxes-----do-----	2,431	2,322	690	1,458	1,605	1,014
Ratio of net operating profit to net sales-----percent--	13.0	11.8	3.8	7.4	7.3	4.8

<sup>1/</sup> 1 of the 11 producers commenced operations during 1956 and furnished profit-and-loss data for 1957-60 only. This producer accounted for a very small part of the total domestic production of ceramic mosaic tile in 1957-60. The profit-and-loss data shown in this table are for 10 producers for 1955-56 and for 11 producers for 1957-60.

<sup>2/</sup> Data for 1 producer are for 9 months only, owing to a change in the end of its accounting year from Dec. 31 to Sept. 30.

Source: Compiled from data submitted to the U.S. Tariff Commission by the domestic producers.

