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Building Stones and Ceramic Tiles

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Yen-Dollar Exchange Rate

Year	Yen/US\$
1992	127
1993	111
1994	102
1995	94
1996	109

Source: "International Financial Statistics," IMF

Introduction

This report will address the following product categories:

Building Stone:

Building stone that has been cut from natural stone and polished; and artificial stone made from a mixture of crushed natural rock with cement and resins. Consists primarily of marble (mainly for interior use) and granite (mainly used on exterior walls and exterior and interior entranceway floors). Stone is imported from overseas quarries and stone suppliers in the form of unprocessed stone (crude or roughly trimmed) or slabs, and then cut and polished in Japan.

Standard Stone Tile:

Natural stone which has been cut to a specific size at a processing factory and then polished or subjected to jet burner treatment or other surface treatment. Standard sizes are 300 mm and 400 mm square with thicknesses of 10-20 mm. Also available in ultra-thin types with a thickness of 5-6 mm (with ceramic or fiberboard backing).

Ceramic Tile:

Tile made from porcelain, stoneware or earthenware. Includes interior tile used in bathrooms and kitchens, exterior tile used on exterior walls, and floor tile used on floors and stairways, plus mosaic tile, which comes in single sheet surface areas of 50 square centimeters or less.

Stone materials are classified as shown below in official customs statistics. The category includes stone material used not only for building and architectural purposes but also as gravestones, stone lanterns, and stone sculptures. Ceramic tile is classified according to whether it is glazed or not. There is no classification for specific usages.

HS No.	Description
25.15	Marble, travertine, ecaussine and other calcareous monumental or building stone of an apparent specific gravity of 2.5 or more, and alabaster, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular shape
25.16	Granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular shape
68.02	Worked monumental or building stone and articles thereof; mosaic cubes and the like, of natural stone, whether or not on a backing; artificially colored granules, chippings, and powder of natural stone
69.07	Unglazed ceramic flags and paving, hearth or wall tiles; unglazed ceramic mosaic cubes and the like, whether or not on a backing
69.08	Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing

I. Import Procedures and Regulations

A. Tariff Rates

There are no regulations on the importation of building stones and ceramic tiles. Building stones are duty-free (under the General rate for their categories). Different tariff rates are applied for ceramic tiles to subclassification by place of origin. The WTO rates are applied for imports from World Trade Organization (WTO) member nations, and General rates for non-member nations. Preferential rates are applied for imports from developing countries and regions, including China, R.O. Korea, and Indonesia, under Generalized System of Preferences. In addition, the Uruguay Round agreement contains a provision calling for a gradual reduction of tariff rates on ceramic tiles.

HS No.	Description	General	WTO		Preferential
			12/31/97	1/1/98	
69.07	Unglazed ceramic flags and paving, hearth or wall tiles; unglazed ceramic mosaic cubes and the like, whether or not on a backing	2.6%	2.3%	2%	Free
69.08	Glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing	3.2%	2.9%	2.5%	Free

B. Building Materials Regulations

1. Building Materials Regulations

Article 37 of the Building Standard Law, as well as Notifications by the Ministry of Construction, mandate use of products compliant with Japanese Industrial Standard (JIS) or Japanese Agricultural Standard (JAS) in the foundations and main structural components of buildings. The building materials which are not specified in the law and notifications can be used if special approval is granted by the Minister of Construction, which is stipulated in Article 38 of the Building Standard Law.

<Article 38 Approval>

To obtain this approval, building materials must be proven through the performance tests at The Building Research Institute, Ministry of Construction, the Center for Better Living, Tsukuba Building Test Laboratory and other designated testing institutions, or at certain testing institutions overseas. The test results are subjected to technical appraisal by The Building Center of Japan (BCJ), a process that typically takes 1-3 months. Then copies of BCJ technical appraisal certificate and report must be submitted along with an application for approval to the Minister of Construction.

The Building Center of Japan publishes various literatures in English, including "Introduction to the Building Standard Law," "Outline of the Approval & Certification System under the Building Standard Law," and "The Building Standard Law of Japan."

C. Industrial Standardization Law (JIS)

1. Stone (JIS A5003-1995)

a. Shape

- 1) Square stones : The width shall be smaller than 3 times the thickness and a certain length (91, 100 or 150 cm) shall be possessed.
- 2) Plate stones : The thickness shall be smaller than 15 cm, and the width shall be 3 or more times the thickness.
- 3) *Kenchi*-stones (square cone stone with cut head) : The face shall as a rule be approximately square in shape, the stay shall taper down on four side, and the length of stay measured normal to the face shall be 1.5 or more times the smallest side the face.
- 4) Rag-stones : The face shall as a rule be approximately square in shape, the stay shall taper down on two side, and the length of stay measured normal to the face shall be 1.2 or more times the smallest side the face.

b. Classification by physical properties (bending strength)

- 1) Hard stone : 4.903 N / cm² & Over
- 2) Semihard stone : 981 to 4.903 N / cm²
- 3) Soft stone : Under 981 N / cm²

c. Grade

- 1) Grade 1: Almost free from defects, and having uniform consignment.
- 2) Grade 2: Defects not remarkable.
- 3) Grade 3: Defects causing no trouble to use.

< The defects of stones shall consist of the following. >

1. Inaccuracy of dimensions, camber, crack, irregular color, rotten spot, chipping, and dent.
2. In soft stones, "spot" and "recess" shall be included beside the above.
3. In decorative stones, "irregularity in color tone or structure" and "stain" shall additionally be included.

d. Designation

< Locality of occurrence or specific name > < Kind of rock > < Kind by physical properties >
< Kind by shape > < Grade > < Dimensions: thickness x width x length >

Example : ○○○ - granite - soft stone - plate stone - grade 1 - 10 x 50 x 91

2. Tile (JIS A5209-1994)

a. Combination of classification by nature of body and name

Nature of Body	Coefficient of Water Absorption	Classification by name
Porcelain tile	Under 1.0%	Interior tile, exterior tile, floor tile, mosaic tile
Stoneware tile	Under 5.0%	Interior tile, exterior tile, floor tile
Earthenware tile	Under 22.0%	Interior tile

- b. Quality standards and test methods on warp and crook, coefficient of water absorption, crazing resistance, abrasion resistance, and bending strength are defined.
- c. Standards on dimensions and tolerances on length, width, and thickness of tiles, shape of tiles and standard of arrangement, shape and dimensions of back feet, and appearance are defined.

d. Marking

Marking on package or invoice

- 1) Type (classification by nature of body, existence of glaze and name)
- 2) Shape (with the exception of unit tiles)
- 3) Dimensions

For unit tiles: 300 x 300 x 5

For module nominal dimensions of tile: (with expression of work dimensions)

100 x 100 98 x 98 x 5

For work dimensions of tiles

(In case of rectangular shape) 108 x 60 x 8

(In case of bend) (108+50) x 60 x 8

- 4) Manufacturer's name or abbreviation

Denotation of uses

The adaptability of tiles in the following fields shall be expressed clearly on brochure, such as a catalog or manual, in accordance with absorption, condition of back feet, etc., and others.

< Example > Floor tile



Interior wall Interior floor Bathroom floor Exterior wall Exterior floor

◎ Optimal ○ Usable conditionally × Do not use

The following tiles shall be explained about appropriate tiling method by catalog, instruction manual and the like.

- 1) Of the porcelain interior tiles and porcelain floor tiles, those without sufficient back feet.
- 2) The tiles the surface area of which exceeds 900 cm².

D. Product Liability Law

The Product Liability Law imposes responsibility for indemnification on manufacturers, processors, and importers of products that cause harm to human life and limb or damage to property as a result of product defects. Under provisions of the law, a defect is not simply as a deficiency in product quality, but rather as a failure to provide a commonly accepted level of product safety. In the case of imports, it is the importer who bears the responsibility of indemnification.

II. Distribution

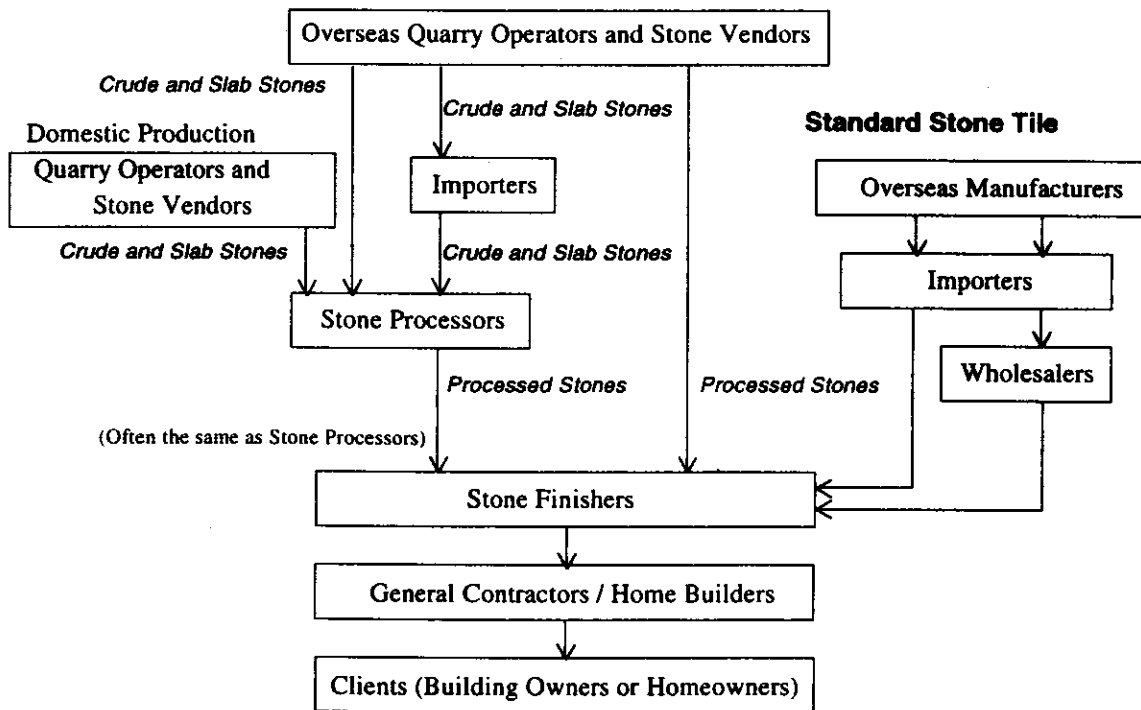
A. Distribution Channels for Building Stone (Standard Stone Tile)

1. Building Stone

Japan produces essentially no marble of its own, and relies on overseas sources for virtually all of its supplies. Japan has also come to rely on imports for about 90% of its supply of granite, due to the declining number of domestic quarries and rising quarrying costs. Marble and granite are imported in the form of unprocessed products or slabs, and are then cut, polished, or otherwise prepared by stone processors before being installed on-site by stone finishers. Stone finishing work is usually performed on a subcontracting basis for general contractors and home builders as part of the construction process.

Distribution Channels for Building Stone and Standard Stone Tile

Building Stone



Handling building stone requires experience and technical resources in every phase of the process, including importing, processing, design, and finishing. Many importers, stone processors, and stone finishers perform more than one, or even all three, of these roles. The following represent typical patterns within the building stone industry.

- ① A single provider and its group affiliates handle the entire process from importation to processing to finishing and installation. Larger enterprises account for most of this pattern, with the import division handling imports and sales of finished and semi-finished products from overseas processors, and the processing division sometimes receiving processing orders from other companies.

- ② Provider focuses mainly on processing, and works on order from stone finishers. Only a small number of these companies have direct-import capabilities.
- ③ Provider specializes in stone processing, and working as a subcontractor for providers of types ① and ②. This type of provider is common in stone-producing areas.
- ④ Provider focuses mainly on design and finishing. This type is common in urban areas. Most processing work is subcontracted to providers of types ① or ②, but this type of provider has some in-house machines that enable them to process rush-order products and carry out final finishing operations.

Companies overseas are increasingly shifting from exporting crude stone to added-value finished products, and this is enabling Japanese stone finishers and general contractors to import directly and thereby circumvent the conventional distribution channels.

2. Standard Stone Tile

Japan also produces almost no standard stone tile of its own (except for ultra-thin or special stone materials), so it relies on imports for virtually 100% of its supplies. Since standard stone tile is relatively easy to finish and install, unlike building stone, it is used widely in retail store and showroom interiors as well as in entranceways to hotels and condominiums. Moreover, because large machines are not required for processing, standard stone tile is made and sold by a variety of providers outside the stone industry, including ceramic tile manufacturers, building supplies manufacturers, and interior fixtures manufacturers. In these cases, standard stone tile is sold and installed through the distribution channels of these providers.

Importers maintain inventories of a wide variety of stone types to accommodate the needs of clients and architectural design firms, and they also have some processing equipment in-house (or contracts with stone processors) to handle secondary processing (curved sections, sandblasting, etc.) and processing required for rush orders. In addition, because standard stone tile is frequently installed by ceramic tile installers, drywall contractors, interior fixture specialists, and other providers outside the stone industry, technical guidance by importers is often required.

B. Ceramic Tile Distribution Channels

There are approximately 160 ceramic tile manufacturers in Japan, most of which are located in Aichi Prefecture or Gifu Prefecture. Because interior tile production entails substantial capital investment, most of the manufacturers are large companies. These manufacturers usually do integrated production at their own factories, encompassing everything from raw material mixing to the finished product. On the other hand, since exterior tile, floor tile, and mosaic tile are small in size and needed in a wide variety of colors and shapes, most are produced by medium-sized and small manufacturers, frequently on an OEM basis for large manufacturers.

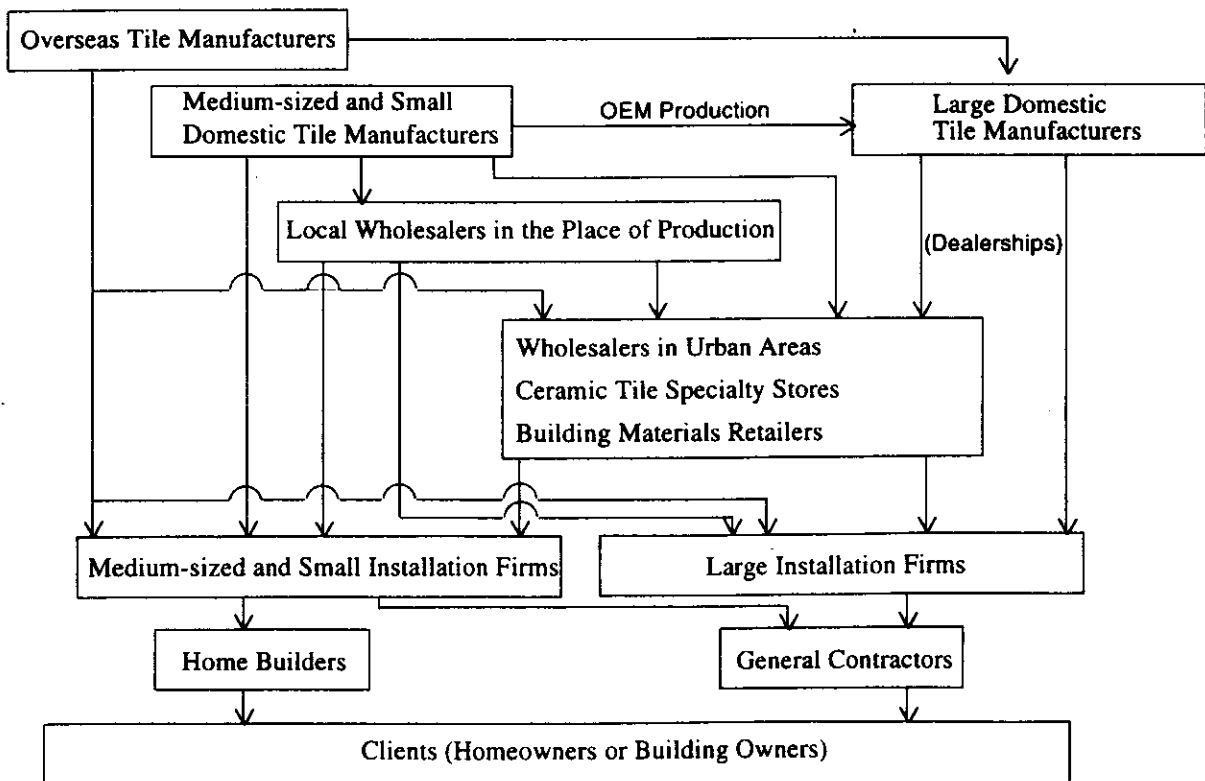
Ceramic tile installation in houses, condominiums, and office buildings is performed in most cases by tile installers working as subcontractors for general contractors or housing manufacturers. Usually the direct user of the ceramic tile manufacturer's products is the tile installer. Sometimes, though, general contractors or housing manufacturers procure ceramic tile directly from tile manufacturers and hire installation firms to do only the installation work.

Large ceramic tile manufacturers sell their products through wholesalers in urban areas (dealers) to installation firms, or directly sell to large installation firms. In the case of medium-sized and small manufacturers, their products are collected by local wholesalers in the place of production, then sold to either wholesalers in urban areas or directly to installation firms.

Importers generally import from abroad in container-size lots, store the goods at their own warehouses, and then sell to either distributors or installation providers. In some cases, leading domestic ceramic tile manufacturers also import direct from abroad in order to expand or supplement their product lines.

Leading ceramic tile manufacturers offer a diverse product line with a rich variety of different sizes, colors, and designs for use in both exterior and interior walls and floors. However, wholesalers in urban areas generally stock only better-selling types of tile and make frequent small-lot shipments to installers. In case of a large-volume order, the tile may be shipped directly from the manufacturer's distribution center to the installation site.

Distribution Channels for Ceramic Tiles



Tile installation firms generally work as subcontractors for general contractors, housing manufacturers, or home builders who are handling the overall construction of the home, condominium, or office building. In recent years, though clients, architectural design firms, and housing manufacturers have been increasingly stipulating that particular manufacturers' products or particular models be ordered. However, it is up to the installer to decide where to buy the specified tile, and leading installation firms either do business directly with the ceramic tile manufacturer or solicit estimates from multiple wholesalers and decide on that basis where to buy and at what price.

In order to respond to the increasing tendency of clients, architectural design firms, and housing manufacturers to specify the type of ceramic tile to be used, leading tile manufacturers are strengthening their direct sales activities while at the same time outsourcing production to medium-sized and small manufacturers and increasing the number of imported products they carry in order to broaden their product lines and enable themselves to fulfill large orders for many different types of tile.

C. Customary Business Practices

Prices for building stone are generally set by a percentage markup over the cost. Some leading stone companies indicated that if the import purchase price (at the warehouse storage point) is set to 100, then the price charged to general contractors is 110-115, and the price charged to clients by the contractors is 115-120.

Preferences of clients and architectural design firms have a powerful influence on the choice of building stone. Importers and stone processing companies market their products by offering stone samples and design patterns and preparing integrated estimates. However, the sluggish demand of recent years has prompted clients and architectural design firms to demand price cuts, resulting in intense price competition among stone companies.

In the field of ceramic tile, there are several methods leading tile manufacturers use to set the price charged to dealers:

- 1) Quoted rate relative to the catalog price
- 2) Price negotiated individually based on set wholesale price
- 3) Price set purely on a case-by-case basis without reference to a catalog price or other set price

Distributors set prices they charge to installation providers separately based on the purchase price along with market conditions and information they have about prices charged by competitors. The downturn in construction of commercial buildings after the collapse of the bubble economy caused a slump in demand for ceramic tile. Also, many housing manufacturers have vigorously demanded lower prices, and when confronted with price reduction demands by installation providers, tile manufacturers get involved in negotiations with them as well.

III. Market Entry

Each nation's natural stone used to make building stone differs in quality, hardness, and moisture absorption rate. Users of building stone are extremely demanding in terms of color and pattern uniformity, absence of color blotches or scratches, and size accuracy. They expect producers to be able to consistently supply material that conforms to these product quality characteristics. The recent trend in imports is away from unprocessed stone and increasingly toward sheet stone (including standard stone tile) and finished products (see Table 3, Table 6). Thus, future growth can be expected in imports of finished products with more added value. The building stone industry faces the difficult challenge of meeting demand for products that are inexpensive yet high in quality and originality. They are working to explore new sources of demand for building stone, while using standard stone tiles as a wedge to try and stimulate recovery in demand among builders of commercial buildings and condominiums, while at the same time seeking more growth in the single-family home sector as well.

Given these circumstances, a number of recommendations can be offered to foreign suppliers for gaining and expanding access to the Japanese market. These recommendations are summarized below.

A. Building Stone

1. Offer Lower Prices

Demand for building stone has been declining rapidly ever since 1993. In addition to the drop in the number of construction projects, builders are facing strong demands to cut construction costs, and this has led to a significant decline in the demand for building stone. As part of their cost cutting efforts, Japanese construction contractors have recently begun procuring building stone directly from abroad without going through domestic stone providers. In addition, stone processors have increasingly been outsourcing processing to China and other low-cost countries as part of their own efforts to cut processing costs. To respond to the market need for lower prices, foreign providers should endeavor to offer lower prices through the following measures:

- Perform the processing needed to turn crude stone into finished products (cutting according to blueprints, making finished sheet stone), instead of shipping in the form of blocks or slabs, in order to cut marine transportation costs to Japan.
- Process the crude stone in the country of production to facilitate direct exporting and reduce processing costs, rather than processing in another country.

2. Reduce Costs by Simplifying Installation

One way to reduce finishing costs and also deal with shortages of skilled stone finishers in Japan, while also reducing finishing turnaround time and offering greater precision, is to simplify installation by adopting the pre-cast concrete (PC) curtain wall method (in which stone slabs processed at a stone processing factory are attached to panelized backing at a specialized plant). Since demand is expected to increase in the future for PC building stone, overseas stone suppliers would be well-advised to develop this method.

3. Improve Product Quality

Japanese users are more demanding about uniformity of finishing, uniformity of color and pattern, and accuracy of size than in other countries. Recently, in particular, with the acute need to cut construction costs, building owners and design firms who use stone are insisting even more than in the past on the highest grade materials. When overseas stone suppliers export finished products, they have to offer a high level of product quality, as well as competitive prices.

4. Improve Processing Precision

Japanese users are demanding products with complicated shapes and curved stone products (*yakumono*), as well as flat stone products with more complex curves and imprinted designs, which is making products more complicated to produce. *Yakumono* requires processing by hand, yet few skilled craftsmen remain in Japan, and the number is continuing to decline. The Japanese building stone industry will increasingly have to import *yakumono* in finished products or outsource its production abroad.

5. Meet Need for Original Stone Types

Building owners and design firms are looking for unique and original stone types, and unusual types of stones are needed to meet this demand, such as marble with black spots on a white background, blue marble, and red granite, etc. Overseas stone suppliers have to recognize and understand these needs and be in position to offer original products.

Marble and other similar types of stone have an upscale, authentic image in the minds of Japanese people. There is widespread latent demand for stone in Japan, provided that the financial resources are available. Demand should resurface if the Japanese economy recovers, but prospects for economic recovery remain clouded, and people in the building stone industry are pessimistic about prospects for a rapid recovery in the stone market. Industry sources believe that for the time being, at least, the market will continue to demand low-priced products. The shift is likely to continue away from crude and slab exports and toward finished product exports, and the use of standard stone tile is likely to continue growing. At the same time, it is expected that there will be further diversification of marble import sources (direct imports from countries other than Italy), as well as increased imports of granite from China due to its cost competitiveness, improvements in processing technology, and consistent product quality.

B. Standard Stone Tile and Ceramic Tile

The standard stone tile market has seen a number of tile manufacturers and other building material companies, and tile manufacturers have grabbed a fairly large share of the standard stone tile market on a volume basis. In the past, building stone companies were not very aggressive in the standard stone tile field, but the moves in recent years to cut construction costs has made custom building products uncompetitive in cost terms, and more and more of these companies are starting to use standard stone tiles (see Table 6). Member firms of the Building Stone Association of Japan produced a total of

880,727 square meters of standard stone tile in 1995, including both in-house products and overseas production orders, which was double the volume produced in 1991.

Because Japan relies almost totally on imports for supplies of standard stone tiles, stone companies and ceramic tile manufacturers face a constant challenge of how to find imports that meet Japanese market needs and are consistently available at competitive prices. The following recommendations can be offered to those seeking access to the Japanese market for standard stone tile and ceramic tile:

1. Adhere Strictly to Delivery Deadlines

Standard stone tile and ceramic tile are divided into standard stock items (with constant level inventory maintained at all times to respond to orders) and custom imports (of which only a limited number of products are kept in stock, with the delivery deadline set at 120 days after the order is issued for imported standard stone tile and 90 days for imported ceramic tile.) Adhering to delivery schedules is the most basic requirement of all business transactions, and one of the main disadvantages of imports is not only that they take longer to arrive than products made in Japan, but that suppliers sometimes miss their deadlines. Thus, overseas manufacturers need to take specific measures to ensure strict adherence to delivery deadlines.

2. Inspect Products Carefully

Users of standard stone tile and ceramic tile demand a high degree of size accuracy, finishing uniformity, and color and pattern uniformity, even more so than users of custom building stone products. Japanese importers routinely conduct rigorous inspections either at the port of shipment or at the destination port in Japan, in some cases involving piece-by-piece inspection of entire shipments and repackaging in Japan. Overseas manufacturers should establish their own voluntary in-house inspection programs in order to win the confidence of Japanese companies.

3. Use of Standard Stone Tile in Exterior Walls and Increased Demand for Exterior Wall Tile

Heretofore use of standard stone tile was limited to building interiors, but organic adhesive materials have made it possible to install standard stone tile on exterior walls, and in the future it is expected there will be more and more cases where standard stone tile are used on exterior walls of single-family homes and low-rise commercial buildings.

In addition, the use of the dry installation method with exterior wall tile has cut installation costs and shortened the time required for installation, as well as enhancing the design appeal compared to the wet method of installation. Domestic tile manufacturers have launched a PR campaign to promote the use of ceramic tile around the foyer. Moreover, the development of panel-type tile represents part of an effort to expand the interior tile market by developing simpler installation methods. Overseas manufacturers would be well-advised to develop products that respond to this trend.

4. Add Functionality

Heightened health concerns in Japan of late have prompted leading manufacturers to introduce antibacterial tile for use in toilets, washrooms, and bathrooms (usually separate rooms in Japan), and these products have been well-received by the public. Antibacterial agents can be mixed in with the glaze without altering the color, design, or sense of solidity in order to add antibacterial functionality, and this will likely increase demand for such products for use in public restrooms, hospitals, cafeterias and other public spaces. Overseas manufacturers would be well-advised to develop products that respond to this trend.

5. Target Sales at Architectural Design Firms

Because building owners and architectural design firms are increasingly specifying particular product items of standard stone tile and ceramic tile, manufacturers are aiming more of their sales at architectural design firms, construction contractors, and building owners (without leaving such activities to their dealers) by collecting architectural information about buildings, etc. in advance. Also, domestic manufacturers are using comprehensive sales activities to encourage users to place one-time orders for all the many different types of tile used in a single building. Overseas manufacturers will find that one of the most effective means of demonstrating the unique characteristics of their products is to pursue sales activities aimed at architectural design firms both in Japan and elsewhere.

Domestic ceramic tile manufacturers regard interior tile from Italy and other European countries as having superior designs that set them apart from products made in Japan, and they are moving in the direction of carrying more such products as a way of supplementing their product lines.

The following is a list of improvements needed in European interior tile, as recommended by people in the Japanese tile industry (installation firms and distributors). If these problems could be resolved, imported interior tiles would likely come into more widespread use:

- a. Sometimes installation problems are caused due to insufficient hardness and unavailability of curved products.
- b. Sizes differ from Japanese tile, and it is difficult to cut them down to size.
- c. It takes extra sorting time to unify sizes and colors.

In addition, low-price exterior tiles from Taiwan, R.O. Korea, and China have gained a significant presence in the marketplace. People in the industry mentioned the following as product quality improvements needed in these products: a. backs are not designed to inhibit separation after installation, b. there are color and size inconsistencies, and sometime there is bending and warping, and c. the protective cover paper does not come off easily.

Appendix

Appendix 1. Market Overview

Demand for building stone and ceramic tile is influenced greatly by trends in commercial (non-residential) building and housing construction. The post-bubble economy recession led to several years of decline in the construction field, and despite a slight recovery trend in the years since FY 1995, construction has not recovered to pre-recession levels (Table 1).

However, new housing starts have remained steady at about 1.5 million units, aided by low interest rate and falling land prices. Moreover, FY 1996 saw some homeowners rushing to get their homes built before the consumption tax increase that went into effect in April 1997, and as a result, new housing starts broke through the 1.6 million unit mark for the first time in six years (Table 2). But in FY 1997 the consumption tax increase is forecast to drive down new housing starts, and with other negative factors such as the decline in public infrastructure investment and the bankruptcies of some prominent general contractors, the market faces an uncertain future.

Table 1 Trends in Total Floor Area of New Construction Starts

	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
Total Floor Area (Annual Percentage Change)	240,140 (- 4.7)	230,848 (- 3.9)	238,587 (+ 3.4)	232,392 (- 2.6)	258,361 (+ 11.2)
Residential	136,067 (+ 2.7)	146,671 (+ 7.8)	157,734 (+ 7.5)	149,095 (- 5.5)	168,061 (+ 12.7)
Non-Residential	104,072 (- 13.0)	84,177 (- 19.1)	80,853 (- 3.9)	83,298 (+ 3.0)	90,300 (+ 8.4)
Office Buildings	18,497 (- 16.9)	12,796 (- 30.8)	11,073 (- 13.5)	10,972 (- 0.9)	11,801 (+ 7.6)
Retail Stores	12,361 (+ 4.8)	10,528 (- 14.8)	10,627 (+ 0.9)	12,201 (+ 14.8)	13,239 (+ 8.5)
Factories and Other Workplaces	18,947 (- 30.1)	14,167 (- 25.2)	13,663 (- 3.6)	14,182 (+ 3.8)	16,952 (+ 19.5)
Warehouses	15,207 (- 11.3)	11,460 (- 24.6)	10,555 (- 7.9)	10,275 (- 2.7)	12,036 (+ 17.1)
Schools	6,493 (+ 3.4)	5,930 (- 8.7)	5,416 (- 8.7)	5,376 (- 0.7)	5,497 (+ 2.3)
Hospitals and Clinics	2,550 (- 2.0)	2,686 (+ 5.3)	3,221 (+ 19.9)	3,831 (+ 18.9)	4,393 (+ 14.7)
Other	30,018 (- 7.3)	26,610 (- 11.4)	26,297 (- 1.2)	26,460 (+ 0.6)	26,383 (- 0.3)

Unit: 1,000 square meters, % Source: Annual Construction Statistics, Ministry of Construction

Note: Fiscal years run from April to March of the next calendar year.

Table 2 Trends in New Housing Starts and Average Floor Area

		FY 1992	FY 1993	FY 1994	FY 1995	FY 1996
Total New Housing Starts		1,419,752 (+ 5.7)	1,509,787 (+ 6.3)	1,560,620 (+ 3.4)	1,484,652 (- 4.9)	1,630,378 (+ 9.8)
Average Floor Area Per Housing Unit		85.7 m ²	89.3 m ²	93.9 m ²	93.0 m ²	96.3 m ²
By Form of Tenure	Owner-Occupied Housing	481,586 (+ 7.6)	536,908 (+ 11.5)	580,927 (+ 8.2)	550,544 (- 5.2)	636,306 (+ 15.6)
	Owner Occupancy Rate	33.9%	35.6%	37.2%	37.1%	39.0%
	Rented Housing	686,777 (+ 18.0)	651,563 (- 5.1)	574,151 (- 11.9)	563,652 (- 1.8)	616,186 (+ 9.3)
	Company-Supplied Employee Housing	34,817 (- 13.9)	31,157 (- 10.5)	27,911 (- 10.4)	25,790 (- 7.6)	25,847 (+ 0.2)
	Housing for Sale	216,572 (- 20.6)	290,159 (+ 34.0)	377,631 (+30.1)	344,666 (- 8.7)	352,039 (+ 2.1)
By Structural Type	Wooden Structure	673,818 (+ 7.2)	702,749 (+ 4.3)	719,945 (+ 2.4)	675,065 (- 6.2)	746,680 (+ 10.6)
	Wooden Structure Percentage	47.5%	46.5%	46.1%	45.5%	45.8%
	Non-Wooden Structure	745,934 (+ 4.4)	807,038 (+ 8.2)	840,675 (+ 4.2)	809,587 (- 3.7)	883,698 (+9.2)
By Type of Housing	Single-Family Housing	631,282 (+ 5.3)	706,542 (+ 11.9)	763,205 (+ 8.0)	729,162 (- 4.4)	827,490 (+13.5)
	Percentage of Single-Family Housing	44.5%	46.8%	48.9%	48.9%	50.8%
	Collective Housing (Apartment, Condominium)	788,470 (+ 6.0)	803,245 (+ 1.9)	797,595 (- 0.7)	755,490 (- 5.3)	802,888 (+ 6.3)

Note 1: The owner occupancy rate, the wooden structure percentage, and the single-family housing percentage represent the percentage of total new housing starts.

Note 2: Non-wooden structure housing includes reinforced concrete structure, steel and reinforced concrete composite structure, steel structure, concrete block structure, and other types of construction.

Note 3: Single-family housing includes terrace houses.

Note 4: Parenthesized figures indicate annual percentage change.

Source: Annual Construction Statistics, Ministry of Construction

(In official import statistics, stone materials include not only stone used for building and architectural purposes, but also as gravestones, stone lanterns, and stone sculptures. There are no official statistics that selectively track only building stones. Industry sources say that virtually all marble is for building use, while about 1/3 of all granite is for building use, with the remaining 2/3 used in gravestones and other non-building uses. In particular, most imports of granite from China are believed to be used for non-building purposes. In addition, official statistics have no category for standard stone tile and it is believed that import documentation is split among several categories, including sheet materials, sheet stones, and finished stone products.)

Imports of stone materials totaled approximately 1.87 million tons worth some ¥108.9 billion in 1996. Over the past five years imports have declined significantly of both marble and granite in crude stone or slab form. Most imports now consist of sheet stones and processed stone products (including standard stone tile). This is a result partly of producer nations' wish to shift from crude stone exports to exports of added value processed products, which accords with the wish of their Japanese counterparts to cut transportation costs and domestic processing costs. Also, this trend is believed to reflect a shift in Japanese market needs toward standard stone tile, a trend which will likely grow in the future (Table 3).

Table 3 Trends in Imports of Building Stone

	1992	1993	1994	1995	1996	'96 / '92
Marble (Total)	146,024 (- 8.3)	138,784 (- 5.0)	136,693 (- 1.5)	127,355 (- 6.8)	120,640 (- 5.3)	- 17.4
Crude Stone	52,436	70,780	65,375	51,583	37,477	- 28.5
Slab	19,960	10,694	7,592	3,354	1,994	- 90.0
Sheet Materials	5,236	4,063	3,573	4,160	3,712	- 29.1
Sheets	58,661	42,657	42,607	58,540	67,447	+15.0
Finished Products	9,731	10,590	17,546	9,718	10,010	+ 2.9
Granite (Total)	1,665,207 (- 4.1)	1,667,878 (+ 0.2)	1,749,876 (+ 4.9)	1,698,926 (- 2.9)	1,708,723 (+ 0.6)	+ 2.6
Crude Stone	1,047,011	1,011,187	976,295	743,060	581,772	- 44.4
Slab	152,639	135,622	101,294	64,398	56,905	- 62.7
Sheet Materials	51,307	70,514	78,809	95,163	100,186	+95.3
Finished Products	414,250	450,555	593,478	796,305	969,860	+134.1
Other (Total)	41,621 (+ 1.3)	36,796 (-11.6)	41,445 (+12.7)	39,848 (- 3.9)	44,588 (+11.9)	+ 7.1
Crude Stone, Slab	20,831	21,780	21,894	16,114	19,088	- 8.4
Finished Products	20,790	15,016	19,551	23,734	25,500	+22.7
Volume Basis (Total)	1,852,852	1,843,458	1,928,014	1,866,129	1,873,951	+ 1.1
Value Basis (Total)	114,173	88,740	91,538	95,680	108,911	- 4.6

Units: Volume = ton, Value = ¥ million Source: Japan Exports & Imports, Ministry of Finance

Note: Parenthesized figures indicate annual percentage change.

Italy accounts for about half (50.4%) of all Japan's imports of marble on a volume basis. However, its exports to Japan have fallen considerably over the past five years, down from 86,795 tons to 60,830 tons, with the decline especially marked in crude and slab form stone. In contrast, second place Spain has seen its exports to Japan rise from 15,505 tons to 21,210 tons, and in the areas of standard stone tile and processed products it has nearly caught up with Italy. Next in order as exporters come Greece, Portugal, and Taiwan, all trailing far behind. China accounts for the majority of Japan's granite imports, with 62.2%. Most of China's granite exports to Japan are used as grave markers, but in recent years the competitive price of Chinese granite combined with China's improved processing technology have attracted greater interest in the field of building stone. Other exporters of granite to Japan include R.O. Korea, South Africa, and India, among a wide range of other countries (Tables 4 and 5).

Table 4 Trends in Leading Exporters of Building Stone to Japan

Marble	Volume Basis					Value Basis				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Total	146,024 (- 8.3)	138,784 (- 5.0)	136,693 (- 1.5)	127,355 (- 6.8)	120,640 (- 5.3)	20,540 (-28.9)	11,594 (-43.6)	10,435 (-10.0)	10,450 (+ 0.1)	13,145 (+25.8)
Italy	86,795 (59.4)	82,106 (59.2)	78,503 (57.4)	64,538 (50.7)	60,830 (50.4)	11,345 (55.2)	6,414 (55.3)	5,774 (55.3)	5,005 (47.9)	6,430 (48.9)
Spain	15,505 (10.6)	19,312 (13.9)	20,222 (14.8)	17,386 (13.7)	21,210 (17.6)	1,561 (7.6)	1,270 (11.0)	1,154 (11.1)	1,167 (11.2)	1,766 (13.4)
Greece	6,889 (4.7)	5,255 (3.8)	8,254 (6.0)	6,960 (5.5)	6,164 (5.1)	986 (4.8)	492 (4.2)	625 (6.0)	953 (9.1)	573 (4.4)
Portugal	3,944 (2.7)	6,712 (4.8)	5,282 (3.9)	6,384 (5.0)	5,562 (4.6)	290 (1.4)	241 (2.1)	206 (2.0)	222 (2.1)	237 (1.8)
Taiwan	7,239 (5.0)	5,084 (3.7)	4,904 (3.6)	4,148 (3.3)	4,972 (4.1)	1,389 (6.8)	923 (8.0)	791 (7.6)	692 (6.6)	920 (7.0)
Philippines	6,491 (4.4)	8,200 (5.9)	5,740 (4.2)	4,863 (3.8)	3,795 (3.1)	1,152 (5.6)	434 (3.7)	354 (3.4)	321 (3.1)	381 (2.9)

Granite	Volume Basis					Value Basis				
	1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Total	1,665,207 (- 4.0)	1,667,878 (+ 0.2)	1,749,876 (+ 4.9)	1,698,926 (- 2.9)	1,708,723 (+ 0.6)	89,336 (-12.1)	73,716 (-17.5)	78,107 (+ 6.0)	81,587 (+ 4.5)	92,010 (+12.8)
China	629,423 (37.8)	736,565 (44.2)	856,657 (49.0)	938,648 (55.2)	1,062,773 (62.2)	18,411 (20.6)	24,051 (32.6)	33,085 (42.4)	42,333 (51.9)	56,298 (61.2)
R. O. Korea	356,433 (21.4)	314,105 (18.8)	282,657 (16.2)	214,331 (12.6)	159,591 (9.3)	32,251 (36.1)	24,244 (32.9)	20,993 (26.9)	16,558 (20.3)	12,996 (14.1)
South Africa	113,642 (6.8)	111,854 (6.7)	95,826 (5.5)	111,192 (6.5)	130,920 (7.7)	3,472 (3.9)	2,950 (4.0)	2,510 (3.2)	3,067 (3.8)	3,669 (4.0)
India	165,148 (9.9)	180,505 (10.8)	204,013 (11.7)	139,409 (8.2)	126,229 (7.4)	7,796 (8.7)	7,095 (9.6)	8,024 (10.3)	6,073 (7.4)	6,173 (6.7)
Italy	65,496 (3.9)	45,240 (2.7)	53,780 (3.1)	54,273 (3.2)	37,815 (2.2)	11,663 (13.1)	5,286 (7.2)	4,634 (5.9)	4,905 (6.0)	4,793 (5.2)

Units: Volume = ton, Value = ¥ million Source: Japan Exports & Imports, Ministry of Finance

Note 1: Parenthesized figures in the column of total indicate annual percentage change.

Note 2: Parenthesized figures in the column of countries indicate share for the year.

Table 5 Type Composition of Building Stone by Leading Exporters (1996)

Marble	Total	Crude Stone	Slab	Sheet Materials	Sheets	Finished Products	Percentage of Crude and Slab Stones
Total	120,640	37,477	1,994	3,712	67,447	10,010	32.7%
Italy	60,830 (50.4)	17,693 (47.2)	734 (36.8)	1,758 (47.4)	36,379 (53.9)	4,266 (42.6)	30.3%
Spain	21,210 (17.6)	4,474 (11.9)	300 (15.0)	457 (12.3)	14,361 (21.3)	1,618 (16.2)	22.5%
Greece	6,164 (5.1)	2,654 (7.1)	138 (6.9)	88 (2.4)	2,876 (4.3)	408 (4.1)	45.3%
Portugal	5,562 (4.6)	3,231 (8.6)	19 (1.0)	40 (1.1)	2,265 (3.4)	7 (0.1)	58.4%
Taiwan	4,972 (4.1)	224 (0.6)	230 (11.5)	336 (9.1)	3,183 (4.7)	999 (10.0)	9.1%
Philippines	3,795 (3.1)	1,204 (3.2)	240 (12.0)	168 (4.5)	2,021 (3.0)	162 (1.6)	38.1%

Granite	Total	Crude Stone	Slab	Sheet Materials	Finished Products	Percentage of Crude and Slab Stones
Total	1,708,723	581,772	56,905	100,186	969,860	37.4%
China	1,062,773 (62.2)	185,992 (32.0)	25,489 (44.8)	91,450 (91.3)	759,842 (78.3)	19.9%
R. O. Korea	159,591 (9.3)	67,719 (11.6)	2,199 (3.9)	3,137 (3.1)	86,536 (8.9)	43.8%
South Africa	130,920 (7.7)	82,218 (14.1)	12,521 (22.0)	702 (0.7)	35,479 (3.7)	72.4%
Italy	37,815 (2.2)	3,156 (0.5)	395 (0.7)	1,779 (1.8)	32,485 (3.3)	9.4%
India	126,229 (7.4)	90,505 (15.6)	2,934 (5.2)	551 (0.5)	32,239 (3.3)	74.0%

Unit: ton Source: Japan Exports & Imports, Ministry of Finance

Note: Parenthesized figures in the column of countries indicate share for the year.

Production statistics compiled by industry organizations (not only of in-house production but also finished product import orders placed with offshore manufacturers) indicate that total production of building stone in 1995 was about 2.52 million square meters. Although the offshore production has fluctuated year by year, the domestic production is on a steady downward path over the past five years. For its part, 1995 saw a dramatic rise in offshore production orders for standard stone tile, indicating that increased demand for standard stone tile is offsetting slumping demand for custom building stone (Table 6).

Table 6 Trends in Production of Building Stone

			1991	1992	1993	1994	1995	'95 / '91
Building Stone	Marble	In house products	739,343	718,367	649,305	600,730	520,241	-29.6%
		Overseas production orders	45,728	84,738	50,918	63,735	61,208	+33.9%
		Total	785,071	803,105	700,223	664,465	581,449	-25.9%
	Granite	In house products	2,060,919	2,057,606	1,893,719	1,560,928	1,470,521	-28.6%
		Overseas production orders	212,771	298,772	195,281	267,416	257,302	+20.9%
		Total	2,273,690	2,356,378	2,089,000	1,828,344	1,727,823	-24.0%
	Terrazzo	In house products	230,591	215,506	159,787	155,291	97,516	-57.7%
		Overseas production orders	276	4,000	4,000	3,000	3,000	+987.0%
		Total	230,867	219,506	163,787	158,291	100,516	-56.5%
	Other Natural Stones	In house products			79,532	106,506	89,474	
		Overseas production orders	n. a.	n. a.	28,272	9,800	16,757	
		Total			107,804	116,306	106,231	
	Total	In house products	3,030,853	2,991,479	2,782,343	2,423,455	2,177,752	-28.1%
		Overseas production orders	258,775	387,510	278,471	343,951	338,267	+30.7%
		Total	3,289,628	3,378,989	3,060,814	2,767,406	2,516,019	-23.5%
Standard Stone Tile	Marble	In house products			9,951	6,589	6,236	
		Overseas production orders	176,519	256,967	67,884	56,688	227,643	
		Total	176,519	256,967	77,835	63,277	233,879	+32.5%
	Granite	In house products	227,448	241,814	24,990	13,637	76,245	
		Overseas production orders			175,667	151,611	416,897	
		Total	227,448	241,814	200,657	165,248	493,142	+116.8%
	Artificial Stones	In house products			66,426	9,226	68,213	
		Overseas production orders	n. a.	n. a.	139,520	30,463	85,493	
		Total			205,946	39,689	153,706	
	Total	In house products	403,967	498,781	101,367	29,452	150,694	
		Overseas production orders			383,071	238,762	730,033	
		Total	403,967	498,781	484,438	268,214	880,727	+118.0%

Unit: m² Source: The Building Stone Association of Japan

Note: The above data reflects production volume of member firms, with other natural stones and artificial stones covered beginning with 1993.

In 1996, domestic shipments of ceramic tile on a value basis fell by 5.7% from a year earlier to ¥179.6 billion, dropping to 85% of the 1992 level (¥212.2 billion). There has been a continued slump in domestic demand, especially in the commercial and condominium construction sectors, and the lower price trend has led to increased use of mosaic tile and spray-painted materials on exterior walls. Also, the proliferation of all-in-one-unit baths has led to a steep drop in demand for bathroom tile. The only variety of tile maintaining its 1992 level in 1996 on a value basis was mosaic tile, with exterior tile, interior tile, and floor tile all registering dramatic declines (Table 7).

Table 7 Trends in Domestic Shipments of Ceramic Tiles

< Value Basis >

(Unit: ¥ million)

	1992	1993	1994	1995	1996
Tile (Total)	212,190 (-11.6)	184,656 (-13.0)	189,236 (+2.5)	190,452 (+0.6)	179,587 (- 5.7)
Exterior Tile	48,483 (-13.3)	40,275 (-16.9)	43,048 (+6.9)	42,762 (- 0.7)	38,990 (- 8.8)
Interior Tile	53,564 (- 5.5)	50,487 (- 5.7)	47,763 (- 5.4)	44,966 (- 5.9)	40,128 (-10.8)
Floor Tile	60,492 (- 6.5)	50,884 (-15.9)	52,256 (+2.7)	52,700 (+0.8)	50,750 (- 3.7)
Mosaic Tile	49,650 (-20.7)	43,011 (-13.4)	46,170 (+7.3)	50,024 (+8.3)	49,719 (- 0.6)

< Volume Basis >

	1992	1993	1994	1995	1996
Unit	Ton	1,000 m ²			
Tile (Total)	1,275 (-11.7)	73,573 (*)	76,084 (+3.4)	78,793 (+3.6)	75,972 (- 3.6)
Exterior Tile	363 (-13.2)	13,353 (*)	14,314 (+7.2)	14,173 (- 1.0)	13,448 (- 5.1)
Interior Tile	198 (- 9.5)	20,291 (*)	19,242 (-5.2)	19,151 (-0.5)	17,146 (-10.5)
Floor Tile	388 (- 8.5)	14,627 (*)	15,431 (+5.5)	16,123 (+4.5)	15,719 (- 2.5)
Mosaic Tile	325 (-14.8)	25,302 (*)	27,098 (+7.1)	29,346 (+8.3)	29,660 (+1.1)

Unit: Volume = ton, 1,000 m² Source: Yearbook of General Merchandise Statistics, MITI
 Note: Beginning with 1993, the volume unit was changed from weight (tonnage) to surface area (square meters).

Imports of interior tile come mainly from Italy, Spain, and other European countries, while imports of exterior tile come mainly from Taiwan, R.O. Korea, and China. Tile imports fell from 1989 through 1993, reflecting domestic market conditions, but the runup in the yen in 1995 pushed down import prices and led to a rapid increase in imports, and growth continued in 1996. As a result, imports climbed to an all-time record of 44,955 tons on a volume basis. Imports also rose 57.4% from the year before on a value basis, climbing to ¥4.593 billion. However, imports still have only a 2.5% share of the Japanese market.

Table 8 Trends in Imports of Tiles

		Volume Basis					Value Basis				
		1992	1993	1994	1995	1996	1992	1993	1994	1995	1996
Total (Annual Percentage Change)		20,452 (-20.2)	20,348 (-0.5)	19,779 (-2.8)	31,345 (+58.5)	44,955 (+43.4)	3,259 (-22.9)	2,444 (-25.0)	2,215 (-9.4)	2,918 (+31.7)	4,593 (+57.4)
By Type	Unglazed Tile (Annual Percentage Change)	7,297 (-4.6)	5,994 (-17.9)	6,544 (+9.2)	14,436 (+120.6)	17,654 (+22.3)	843 (-16.5)	552 (-34.6)	583 (+5.7)	992 (+70.1)	1,433 (+44.4)
	Glazed Tile (Annual Percentage Change)	13,155 (-26.8)	14,354 (+9.1)	13,235 (-7.8)	16,909 (+27.8)	27,301 (+61.5)	2,416 (-24.9)	1,893 (-21.7)	1,632 (-13.8)	1,926 (+18.0)	3,161 (+64.1)
By Country/Area	Italy	6,188 (30.3)	5,701 (28.0)	6,562 (33.2)	9,485 (30.3)	13,242 (29.5)	1,361 (41.8)	911 (37.3)	897 (40.5)	1,009 (34.6)	1,589 (34.6)
	Taiwan	3,449 (16.9)	4,037 (19.8)	4,853 (24.5)	4,694 (15.0)	7,501 (16.7)	318 (9.7)	353 (14.4)	445 (20.1)	377 (12.9)	644 (14.0)
	Spain	2,457 (12.0)	4,022 (19.8)	3,380 (17.1)	5,943 (19.0)	7,489 (16.7)	314 (9.6)	296 (12.1)	228 (10.3)	370 (12.7)	613 (13.3)
	R. O. Korea	945 (4.6)	1,099 (5.4)	1,176 (5.9)	2,415 (7.7)	4,571 (10.2)	103 (3.2)	126 (5.1)	115 (5.2)	205 (7.0)	467 (9.7)
	China	866 (4.2)	102 (0.5)	309 (1.6)	1,264 (4.0)	4,785 (10.6)	67 (2.1)	4 (0.2)	38 (1.7)	90 (3.1)	390 (8.5)
	U. S. A.	406 (2.0)	473 (2.3)	413 (2.1)	789 (2.5)	800 (3.3)	75 (2.3)	79 (3.2)	91 (4.1)	255 (8.7)	274 (6.0)
	Germany	4,423 (21.6)	3,605 (17.7)	1,188 (6.0)	1,182 (3.8)	1,489 (1.8)	731 (22.4)	469 (19.2)	194 (8.8)	197 (6.8)	168 (3.7)

Units: Volume = ton, Value = ¥ million Source: Japan Exports & Imports, Ministry of Finance
 Note: Parenthesized figures in the column of countries indicate share for the year.

Most standard stone tile comes in 300 mm squares and 400 mm squares, with the usual thickness being 10-20 mm. Because the sheets are so thin, they can easily be processed using small-scale machinery, which makes them easy to handle. Since installation is also simple, tile craftsmen and interior fixture installers can learn the techniques in a short time, which makes them well-suited to retail store remodeling projects. The following table 9 lists the standard sizes of standard stone tile used in Japan and their prices.

Table 9 Standard Stone Tile Sizes in Japan

Type	Size (mm)	Sale Unit (Sheets)	No. of Sheets Required per m ²	Weight (kg)	Standard Price (¥ / m ²)
Natural Marble	150×300×7	22	22	19.2	25,000
	300×300×10	10	11	26.1	24,000
	400×400×15	1	6.25	7.2	25,000
	600×600×18	1	2.78	19.0	39,000
Natural Granite	300×300×10	10	11	26.1	33,000
	400×400×12	1	6.25	5.6	37,000
	600×600×20	1	2.78	21	41,000
Artificial Marble	400×400×12	5	6.25	26.5	14,000
	600×600×12	1	2.78	13.0	15,000

Note: Stated prices are design stage material prices, not including installation costs. Shipping charges are also billed separately, and consumption tax is added on later.

When made in Japan, 200 mm square tile, for example, indicates standard size with seams, and is made slightly smaller than 200 mm so that it will be 200 mm when finishing is complete. However, imported tile often comes in exactly 200 mm size. The following tables list the standard tile sizes and shapes used in Japan (Table 10), and the standard charges for tile installation in single-family housing (material prices plus installation costs) (Table 11).

Table 10 Standard Shape and Size of Ceramic Tiles in Japan

Type	Standard Shape	Actual Size (mm)	Standard Size with Seams (mm)	Thickness (mm)	No. of Sheets Required per m ²	Standard Price (¥ / m ²)
Interior Tile	100 mm Square	97.75 × 97.75	100 × 100	5.0	105	5,500
	100 mm Square "Double"	197.75 × 97.25	200 × 100	5.5	53	7,000
	150 mm Square	147.75 × 147.75	150 × 150	5.5	46.5	8,000
	200 mm Square	197.75 × 197.75	200 × 200	5.5	26.5	10,900
Exterior Tile	Small	108 × 60	—	13	135	7,000
	Double	227 × 60	—	13	67	7,600
	Border	227 × 40	—	13	87	8,900
Floor Tile	100 mm Square	92 × 92	100 × 100	15	102	7,500
	100 mm Square "Double"	192 × 92	200 × 100	15	51	8,800
	150 mm Square	142 × 142	150 × 150	15	45	9,800
	200 mm Square	192 × 192	200 × 200	15	26	10,900
	300 mm Square	292 × 292	300 × 300	15	11.5	15,300
Mosaic Tile	50 mm Square	45 × 45	50 × 50	7.5	11.5	4,200
	50 mm Double	95 × 45	100 × 50	7.5	11.5	4,300
	50 mm Triple	145 × 45	150 × 50	7.5	11.5	7,600

Note: Standard size with seams of paper covered mosaic tile is 300 x 300 mm.

Table 11 Example Prices of Standard Residential Tile Installation Charges in Japan

Location	Exterior			Interior			
	Wall (Dry Method)	Gate Wall	Entranceway	Kitchen	Bathroom	Toilet Room	
Tile Type	Exterior Tile	Border Tile	Floor Tile	Interior Tile	Interior Tile	Interior Tile	
Tile Size		300 × 40mm	300 × 300mm	150 × 150mm	150 × 150mm	150 × 150mm	
Installation Space	approx. 90 m ²	approx. 46 m ²	approx. 12 m ²	approx. 3.5 m ²	Wall (approx. 18.5 m ²) Floor (approx. 1.8 m ²)	Wall (approx. 4.5 m ²) Floor (approx. 1.8 m ²)	
Standard Installation Charge (¥1,000)	Materials Charge	1,460	606	300	27	174	92
	Installation Charge	1,090	816	96	27	177	60
	Total	2,550	1,422	396	54	351	152

Source: Japan Ceramic Tile Association

Appendix 2. Trade Fairs and Exhibitions

(1) JAPAN STONE FAIR INTERNATIONAL

Frequency / Dates : Every 3 years (November 12 - 15, 1997)
Site : Tokyo Big Sight (Tokyo International Exhibition Center)
Exhibits : Japan's largest exhibition for stone material industry, including crude stone, standard stone tile, stone products for architectural use, gravestones, stone sculptures, machinery/tools for processing stone, CAD/CG systems
Visitors : 21,861 (November 1 - 4, 1994)
Scope of Previous Fairs : Exhibitors / 393, 13,200 m²
Organizer : Japan Management Association
Contact : c/o Convention Division, Japan Management Association
3-1-22 Shibakoen, Minato-ku, Tokyo 105-0011
TEL: 03-3434-1243 FAX: 03-3434-8076

(2) JAPAN HOME SHOW

Frequency / Dates : Annual (November 11 - 14, 1997)
Site : Tokyo Big Sight (Tokyo International Exhibition Center)
Exhibits : Housing trade exhibition of household equipment & systems, building materials, housing equipment
Visitors : 110,000
Scope of Previous Fairs : Exhibitors / 285, Total number of booths / 660
Organizers : Japan Management Association,
Japan Housing Equipment & System Association
Contact : c/o Convention Division, Japan Management Association
3-1-22 Shibakoen, Minato-ku, Tokyo 105-0011
TEL: 03-3434-1243 FAX: 03-3434-1836

(3) Architecture + Construction Materials

Frequency / Dates : Annual (March 3 - 6, 1998)
Site : Tokyo Big Sight (Tokyo International Exhibition Center)
Exhibits : Interior/exterior goods, landscape materials, construction methods, etc. of commercial facilities and cultural/public facilities
Visitors : 172,422 (March 4 - 7, 1997)
Scope of Previous Fairs : Exhibitors / 109, Total Number of Booth / 332
Organizer : Nihon Keizai Shinbun, Inc.
Contact : 1-9-5 Otemachi, Chiyoda-ku, Tokyo 100-0004
TEL: 03-5255-2847 FAX: 03-5255-2860

(4) Tokyo International Good Living Show

Frequency / Dates : Annual (April 22 - 26, 1998) (tentative)
Site : Tokyo Big Sight (Tokyo International Exhibition Center)
Exhibits : Japan's largest trade exhibition for household equipment, furniture, interior goods
Visitors : 194,199 (April 23 - 27, 1997)
Scope of Previous Fairs : Exhibitors / 380, Total booth size / 3,200 m²
Organizer : Tokyo International Trade Fair Commission
Contact : 3-21-1 Ariake, Koto-ku, Tokyo 135-0063
TEL: 03-5530-1121 FAX: 03-5530-1222

Appendix 3. Organizations

(1) Government Agencies

Ceramics and Construction Material Division, Consumer Goods Industries Bureau,
Ministry of International Trade and Industry

1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-0013 TEL: 03-3501-1511 FAX: 03-3501-0317

Household and Miscellaneous Goods Division, Consumer Goods Industries Bureau,
Ministry of International Trade and Industry

1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-0013 TEL: 03-3501-1511 FAX: 03-3501-6794

(2) Industrial Organizations

The Building Stone Association of Japan

Ogura Bldg., 1-36-11 Asakusa-bashi, Taito-ku, Tokyo 111-0053

TEL: 03-3866-0543 FAX: 03-5687-3406

Japan Stone Traders Association (JASTA)

2-13-45 Kami-Osaki, Shinagawa-ku, Tokyo 141-0021

TEL: 03-3440-1401 FAX: 03-3440-1410

Japan Ceramic Tile Association

Japan Pottery Center Bldg., 39-18 Daikan-cho, Higashi-ku, Nagoya 461-0002

TEL: 052-935-7941 FAX: 052-935-4072

Japan Ceramic Tile Association (Tokyo Branch)

Toto Bldg. 9F, 1-1-28 Toranomom, Minato-ku, Tokyo 105-0001

TEL: 03-3591-4779 FAX: 03-2581-9076

(3) Importers / Processors of Building Stone

Ando Marble Co., Ltd.

2-3-2 Hacchobori, Chuo-ku, Tokyo 104-0032

TEL: 03-3553-2170 FAX: 03-3553-2179

ABC Trading Co., Ltd.

2-12-14 Nagata-cho, Chiyoda-ku, Tokyo 100-0014

TEL: 03-3507-7111 FAX: 03-3507-7398

Matsushita Sangyo Co., Ltd., Tokyo Branch

7-2-12 Nishi-Shinjuku, Shinjuku-ku, Tokyo 160-0023

TEL: 03-3363-6031 FAX: 03-3361-9330

Inter Rock Corporation

2-13-45 Kami-Osaki, Shinagawa-ku, Tokyo 141-0021

TEL: 03-3440-1401 FAX: 03-3440-1410

Kaisei Shoji Kaisha Ltd.

3-9-6 Shibuya, Shibuya-ku, Tokyo 150-0002

TEL: 03-3409-5654 FAX: 03-3499-6389

(4) Tile Manufacturers / Standard Stone Tile Importers

INAX Corporation

Nishi-Shinjuku Elle-Tower, 22F, 1-6-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-1522

TEL: 03-5381-7427 FAX: 03-5381-7441

TOTO Ltd. (Overseas Sales Division)

1-24-3 Minami-Aoyama, Minato-ku, Tokyo 107-0062

TEL: 03-3595-9324 FAX: 03-3595-9384

Danto Corporation

1-12-8 Edohori, Nishi-ku, Osaka 550-0002

TEL: 06-448-6261 FAX: 06-445-1406

Advan Co., Ltd.

4-32-14 Jungumae, Shibuya-ku, Tokyo 150-0001

TEL: 03-3475-0281 FAX: 03-3475-0280

Eastern Shokai Co., Ltd.

1-5 Yotsuya, Shinjuku-ku, Tokyo 160-0004

TEL: 03-3353-7711 FAX: 03-3351-0296

Daiwa Bussan Co., Ltd. (No. 2 Sales Division)

2-1-3 Minami-Honmachi, Chuo-ku, Osaka 541-0054

TEL: 06-261-8871 FAX: 06-264-5740

Nagoya Tsusho Kaisha Ltd.

205 Tokugawa-cho, Higashi-ku, Nagoya 461-0023

TEL: 052-935-8545 FAX: 052-937-7767