



REPUBLIC OF TURKEY
MINISTRY OF ECONOMY



INDUSTRY



NATURAL STONES



TURKEY

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NATURAL STONES

Natural stone is the oldest construction material used by man. From ancient times until today, natural stones have played an important role in Turkish industry and architecture.

Marble has been processed and used by all civilizations in Anatolia. Since ancient times marble has been used as an architectural decoration in order to beautify the floors and walls of palaces, temples and public areas. The statues and monuments dating back to the Hittites, Greek and Roman amphitheaters, arenas and other works of art; the palaces, baths, caravanserais, mosques and medreses of the Seljuk Turks, and Ottoman mosques, minarets and fountains all prove that marble has been extensively used in Anatolia.

The Roman, Seljuk and Ottoman empires in particular used marble in their buildings. Two of the seven ancient wonders of the world are in Bodrum and Ephesus. The most famous was the Temple of Artemis, which was one of Seven Wonders of the World. It was the first temple in ancient world that was made of marble. The second one is Mausoleum of Halicarnassus which was a tomb built between 353 and 350 BC at Halicarnassus. It was made of alabaster and stood approximately 45 meters (135 feet) in height. The Aspendos theatre in Side, in the south part of Turkey, is the best-preserved Roman theatre. It was made of calcareous stone. It seats 15,000 persons and has remained perfectly intact for 1800 years while earthquakes, wars and time have destroyed most of the surrounding monuments.

The natural stone industry consists of basic stones such as marble, granite and other natural building stones such as limestone, travertine, basalt, sandstone, serpentine, diabase, and slate. In addition to these stone varieties, in recent years slate stone, pebble stone and tufa are coming to the forefront in Turkey's stone production and export.

Today natural stone and stone products are used by different end-users. The main end-users are stone processing industry, the building industry and the consumer market. The main uses of natural stone are tiles for floors and paving, special works such as balustrades, columns, fireplaces, fountains, grave stones, structural works like sets and curb stones, internal & external wall cladding and stairs/steps.

Turkey is a land of marble

In terms of natural stones, and especially marble, Turkey has ample resources since it is located in the Alp's mountain range. Turkey has been one of the oldest marble producers in the world with its 4,000 years of background in marble production starting on the Marmara Island.

Turkey has immense reserves of marble, travertine, onyx, conglomerate, breccias and magmatic rocks. Turkey's total marble reserves are estimated at about 5.2 billion m³ –13.9 million tons. Turkey has an exploitable reserve of 3.8 billion m³ for marble deposits; the same figure is 2.7 m³ for travertine and 995 million m³ for granite. According to estimates, Turkey has 40 percent of the world's total marble reserves. Having a considerable and quite diverse mineral base, Turkey has one of the world's largest natural stone reserves, which is considered to be excellent quality and exclusive due to great variety of colors and textures.

Turkey is among the world's most important natural stone manufacturers with its huge reserves and well-developed processing industry.

Common characteristic properties of Turkish marbles

Quality - free from any cracks or other defects

Color - there is a wide range of colors, which allows a wide range of choice

Sizes - sufficient to yield big blocks

Uniformity - consistency in quality

Pattern - decorative arrangements of colors and crystal composition are possible
Good technical properties result in natural resistance to air pollution, wear and dirt.

Besides these common properties every marble has its specific colors and composition, which make it possible to use them in the production of exclusive products.

Important reserves of marble are located in all regions of Anatolia and Thrace. Reserves are concentrated in Afyon, Balıkesir, Denizli, Tokat, Muğla and Çanakkale. ,

The best-known varieties of Turkish marble

Elaziğ Cherry: Elaziğ cherry is made of serpentinite and carbonated ultra basic rocks. Red-green pebbles are attached with the same colored cement. It can be used in interior /exterior plating and decoration. Some structural fissures are found in blocks.

Supren: It generally shows cataclastic texture and gray-white colors which have red-pink and yellow veins, zones and patches. It can be used in interior / exterior plating, floor covering and decoration.

Leopard (Salome): This marble of generally cataclastic texture has red-yellow veins, knots and zones in a white background. It can be used in interior/exterior plating, floor covering and decoration.

Milas Kavaklıdere: It has a white color and occasional purple veins. There are some localized fractures in blocks.

Aegean Bordeaux: It can be used in interior/exterior plating and decoration. There are some localized fractures in the block, gives good plates. Cutting sides and corners and shaping are difficult. It can be split at the fissures during polishing.

Aksehir Black: This marble showing cataclastic texture in general, has white calcite veins and brown styloliths and can be used in interior /exterior plating or decorative arrangements. It can be easily cut and polished.

Thracian Granite: It can be used in interior / exterior plating, floor covering or decoration. Its suitability for taking blocks and plates and cutting sides and corners is good; while the ability to shape and polish is normal. The cutting rate is slow.

Ayvalık Granite: It can be used in interior / exterior plating, floor covering or decoration. Its suitability for taking blocks and plates and cutting sides and corners is good; while the ability to shape and polish is normal. Cutting can be slow.

Afyon White: It contains occasional yellow veins. Its suitability for taking blocks and plates and cutting sides and corners, polishing and the shaping and the cutting rate are all excellent. There is no risk of rusting.

Afyon Tigerskin: Its suitability for extracting blocks and plates, cutting sides and corners, the shaping, and the cutting rate are all good. There is no rusting risk. Suitability for polishing is normal. This marble has breccia-like formations including light knots and elements embedded in dark-gray masses.

Marmara White: Its suitability for making blocks and plates, cutting sides and corners; and cutting rate are all good. There is no rusting risk.

Mustafa Kemalpaşa White: This marble is made of large calcite crystals manifesting grano blasting texture and pressure twinning and has a white color. It can be used in interior / exterior plating, floor covering and decoration. Its suitability for taking blocks and plates, cutting sides and corners, the shape ability and the cutting rate are all good. There is no rusting.

Karacabey Black: Some structural fissures have been observed in blocks. It can be used in interior plating and decoration. Its suitability for taking plate and the cutting rate are normal. The suitability for cutting sides and corners is good. There is no risk of rusting.

PRODUCTION

Quality and exclusivity are the major characteristics of Turkish marbles.....

More than 1.500 marble quarries, 2.000 factories and about 9.000 workshops operate in the sector. 90% of quarries are located in the west of Anatolia, mainly in the Aegean and Marmara Regions.

The production of natural stones in Turkey has grown rapidly in the last decade. Large scale private companies invested in integrated processing plants, which resulted in developments in the local market. With the introduction of modern production equipments and methods, Turkey has become one of the world's prominent natural stone producers.

The increases in production, the vitality of the construction sector in the domestic market and the presence of new technologies have contributed to the widespread use of natural stone as a construction material. Parallel with the increase in both domestic and foreign/international demand, the Turkish marble industry has shown very good performance in terms of quality and production capacity.

Turkish marble manufacturers are aware of the importance of quality. They use the world's most advanced, fully electronic and completely automatic machines. Most companies have a large machinery park, and in the marble quarries the latest technology and high-tech machines are being used. The processing plants are capable of producing tiles, cutting in all commercially required sizes and quality standards.

Turkey's total production capacity of marble is 6.5 million m² and for granite 10, 5 million m². In last years marble production increased sharply. According to data from MIGEM (The General Directorate of Mining Affairs), major products which are produced in Turkey are marble, travertine, basalt and andesite. Granite production is the other important item in stone industry.

Granite, generally used in developed countries because of its characteristic properties, has begun to be widely used in Turkey, too. Today it is extensively used for the inner and outer decorations of buildings because of its appearance, durability against external conditions and high resistance to wear. In Turkey, in addition to large marble reserves, there are also granite reserves in many cities including Ordu, Rize, Trabzon, Balıkesir, Kırklareli, Kırşehir, Bolu, İzmit, Çanakkale and İzmir.

Though the natural stone quarrying and processing sector in Turkey is mainly composed of small and medium-sized companies, these companies are well organized under producers' associations and exporters' unions.

Natural stones produced in Turkey are manufactured in accordance with international standards. Companies affix the "CE Mark" in compliance with the Construction Products Directive of EU which has been in force in Turkey since 2007.

Turkish marble has been widely used in world-famous places due to its different color scales and quality. In the entrance hall of St. Peters church, which is one of the most important churches in Vatican, marble from Afyon Iscehisar has been used in columns and coverings. In the White House, USA, Elazığ cherry has been used in the place where the press statements are made. Some of the other places that Turkish marble has been used in the construction are the German and French Statehouses and the United States Congress Building. In Disneyland, the most famous amusement park in the world, 18 thousand m2 of Turkish marble are used. In addition to these, many luxury hotels prefer to use Turkish marble in their floor coverings.

With its vast reserves, advanced processing techniques and capacity, Turkey is one of the world's important centers of the natural stone industry. These stones and marble processing technology are exhibited in international and local fairs organized in Turkey.

EXPORTS

Fast Growth in EXPORTS.....

Natural stone exports have developed rapidly in the last ten years. Turkish stone can be found in the buildings and sidewalks of 200 different countries. The total value of natural stone exports reached US\$1.7 billion in 2011. More than one third of Turkish natural stone exports are made to China with 38%. The other important trading partner is USA with a share of 14%, which is followed by Iraq, Saudi Arabia, the United Kingdom, Canada and France.

The most value-added-product in exports is processed marble with 49%, which is cut and polished marble. Processed marble ranks first with a US\$814 million export value. In 2011, the main countries that Turkey exported processed marble were the USA, Iraq, Saudi Arabia, the United Kingdom, and Canada.

Block marble ranked second with US\$ 688 million in 2011. China, India, Syria, Taiwan and Italy are the major buyers of block marble from Turkey.

Granite exports reached US\$ 37 million in 2011. The most important markets for these items are Germany, the Russian Federation, Switzerland, Italy and the Netherlands.

Turkey's Natural Stone Exports (Quantity: ton, Value: US\$ 1000)

	2009		2010		2011	
	Quantity	Value	Quantity	Value	Quantity	Value
Block Marble	2.931.546	424.815	4.259.704	642.603	4.466.682	688.393
Processed Marble	1.392.664	700.365	1.589.045	771.618	1.684.611	813.896
Block Granite	143.173	10.226	187.969	9.800	441.744	14.939
Processed Granite	12.660	7.786	5.930	4.594	7.604	5.958
Others	381.279	89.179	572.544	131.590	611.968	140.551
Total	4.861.322	1.232.371	6.615.193	1.560.204	7.212.609	1.663.736

Natural Stone Exports by Countries (Value: US\$ Million)

Countries	2009	2010	2011	2010-11 Change %	2011 Share %
China	352,6	595,0	635,4	6,8	38,2
USA	207,7	218,8	236,3	8,0	14,2
Iraq	33,0	71,2	81,7	14,7	4,9
Saudi Arabia	43,2	45,8	62,5	36,3	3,8
England	51,1	47,9	45,7	-4,5	2,7
Canada	33,1	44,8	43,2	-3,5	2,6
France	26,2	32,4	42,3	30,6	2,5
India	34,7	44,2	37,5	-15,2	2,3
Israel	26,3	31,0	35,2	13,7	2,1
UAE	26,0	22,2	29,3	32,1	1,8
Russian Federation	11,8	17,9	28,2	58,1	1,7
Germany	21,4	21,8	27,0	23,6	1,6
Syria	19,4	23,9	25,1	5,1	1,5
Azerbaijan	20,5	17,7	24,7	39,7	1,5
Australia	15,9	16,8	22,2	31,8	1,3
Italy	19,4	18,9	18,4	-3,0	1,1
Taiwan	13,1	12,1	17,7	46,2	1,1
Spain	18,4	17,4	16,7	-3,7	1,0
Turkmenistan	17,1	20,7	15,3	-26,2	0,9
Singapore	7,2	6,8	10,5	53,1	0,6
Top 20 Total	998,2	1.327,4	1.455,0	9,6	87,5
Total	1.232,4	1.560,2	1.663,7	6,6	100

TRADE FAIRS IN TURKEY

- “Marble 18. The International Marble & Natural Stone Technologies Fair”
March 2012, Izmir
- “Natural Stone 2012, International Marble, Natural Stone Products and Technologies Exhibition Fair” 18-21 October 2012, Istanbul
- “Stone Eurasia 2012, Natural Stones, Marble Production and Forming Technologies Trade Fair” 29 August – 01 September May 2010, Istanbul

USEFUL ADDRESSES

- Turkish Marble, Natural Stone and Machinery Manufacturers Association
www.tummer.org
- Denizli Marble Manufacturers Association
www.denmeder.org.tr
- Burdur Marble Manufacturers Association
www.burmeder.org
- Ministry of Energy and Natural Resources
www.enerji.gov.tr
- General Directorate of Mining Affairs
www.migem.gov.tr
- Istanbul Minerals and Metals Exporters’ Association
www.immib.org.tr
- European & International Federation of Natural Stone Industries (EUROCOG)
www.euroroc.net



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