

MAKRANA MARBLE- THE EPITOME OF VERSATILITY

Makrana the Sangemermer city is situated in the Nagaur District of Rajasthan and well connected by rail and road from various cities of Rajasthan, India.

Makrana marble is one of the most preferred ornamental stones which finds its usage in several spectacular heritage buildings and monuments within the country and abroad. The Taj Mahal of Agra (one of the New Seven Wonders of the World and a UNESCO world heritage site) and the Victoria Memorial of Kolkata are both made in Makrana marble, enumerating the two most iconic monuments representing the Moghul and British era architectural heritage of India. Makrana marble has also been a major building material for scores of forts, palaces and archaeologically significant buildings in India that include white marble structures within Red Fort (both in Delhi and in Agra), Humayun's Tomb, Akbar's Tomb, among others. The international use of Makrana marble includes the Sheikh Zayed Mosque, Abu Dhabi, UAE, and Moti Masjid, Lahore, Pakistan.

Brief History

Taj Mahal was probably the first monument in which marble from Makrana was used. It is believed that for construction of Taj Mahal, artisans came from the Mekran city of Iran and thus the place derived its name as Makrana.

It is also believed that the contractor engaged for excavation of marble from Makrana was Paharkhan who had dug a well there and accordingly one of the mining range is still known as Paharkua.

Marble from Makrana was transported to Agra through Bullock carts, Camels and elephants.

Consequent to constructions of Taj Mahal, the marble from Makrana was extensively used in construction of various forts, temples and mosques.

Victoria Memorial is another example of an iconic building made up of Makrana marble which was built by British. The construction of the memorial was entrusted to Martin Burn & Company which had erected a steam operated Jib crane and also installed an Italian Gang saw machine for cutting purpose. Such gang saw machines which were using sand and water as cutting media continued in operation till early seventies.

Subsequently, diamond gang saw of BRA Company which was first exhibited in Asia 72 exhibition in New Delhi attracted the attention of entrepreneurs and similar machines revolutionized marble processing in Makrana and other nearby stone clusters.

Martin Burn & company had deputed an engineer in Makrana Mr Albert for excavation and procuring marble. It is believed that the marble excavated by Albert is known as Alberto or more commonly as Albeta having black and brown veins within white marble. During that era, the British were known as Sahab and the mining range discovered by Albert is known as Sahabwali range.

Geological Set up

Rajasthan is endowed with a highly varied and complex geological history, distinguished by the coexistence of ancient rocks of the Archaean era (more than 2,500 million years old) with sub-recent (5,000 years old) layers of alluvium and windblown sand. Makrana marble deposits belongs to the Ajmer Formation of Kumbhalgarh Group of the Delhi Supergroup . The next significant rock formation

in the region is the Raialo Series, comprising of limestones (frequently metamorphosed to marble, as in the Makrana marble), along with sandstones, garnetiferous mica schist and steatite. The Raialo Series overlays the Aravali system, and is, in turn superimposed by the Delhi system.

The quantity of marble reserves in the region is estimated to be 55 million tonnes by the State government. About 120 thousand tonnes of the marble are produced annually in the region having around 800 quarry licence holders. Some of the mines are as deep as 500 feet and using latest mining machines like wire saws and derrick cranes.

Prominent Mining Range and Blocks

1. Paharkuan Range- White Albata
2. Kolha Dungri
3. Dungri
4. Chak Dungri -Adanga
5. Sahabwali- Albata
6. Bhot -Adanga
7. Matabar
8. Ulodi- Adanga pink
9. Nahar
- 10.Kumhari
- 11.Rawat Dungri Adanga
- 12.Chaurasa- White
- 13.Boarwad Range
- 14.Gunawati

Types of Makrana Marble

Makrana Marbles splits into various categories according to its design and pattern. The following are the exclusive variants of marbles which are mined and processed at Makrana and other clusters.

Makrana White Marble- Makrana marble is highly used in residential & commercial buildings and numerous temples, mosques, churches, and monuments, it can be used for decorative purpose in houses, hotels, corporate offices and Restaurants, western and Indian sculptures, handicrafts.

Albeta Marble- This marble stone is a calcite stone. It is a milky white marble and also available in grey and panther brown pattern.

Dungri Marble- Dungri Marble is one of the oldest and finest quality marble of makrana based mines. This stone is widely used in flooring, and wall cladding due to its special qualities like no chemical reinforcement, no color changes, and no pin holes.

Chak Dungri Marble

Khumari marble- a grey marble with patterns or striations

Makrana pink- Pink marble with patterns or striations

Makrana Pink Adanga- pink marble with patterns

Adanga marble - a marble that varies in colour from grey or brown

Applications

The Makrana marble holds a unique place in the history of stones heritage owing to its visual appeal and homogenous monomineralic attributes. Its crystalline, compact and interlocking texture renders it less porous and enhances its resistance and durability.

Makrana marble is perhaps the best available marble in the world having 95-98% calcium carbonate with almost negligible amount of iron content.

These qualities have made the Makrana marble an ideal material for monuments and buildings. Contemporary use of Makrana marble as a dimension stone include cladding, paving, flooring and façade. It is commonly used for making sculptures, ornate garden furniture and fountains which commonly adorn the popular public places like gardens, shopping arcades and malls. Makrana marble has been widely used across the Indian subcontinent, and in combination with its unique geological properties, it fulfils all the criteria and norms to be accredited as a Global Heritage Stone Resource.

Skills and Craftsmanship

The crafts persons of Makrana pride themselves on the intricacy of their workmanship and specialize in making ornately carved architectural elements, temple elements, landscape features and artefacts. Inlay work of lapis lazuli and other precious and semi-precious stones in white marble is popular and a number of expert inlay workers are operating in the cluster.

Evolution of the cluster

Makrana over the years has not only evolved as one of the prominent clusters of extraction and processing of various varieties of Makrana marble but it has also become a centre for intricately carved marble artefacts and architectural elements. Latest mining and processing machinery such as wire saw, diamond gang saw, line polishing plants, Derrick cranes etc are under operation. For artefacts and architectural elements, CNC and water jet cutting machines are being used extensively which has completely revolutionized stone working in Makrana.