

# A Study on Marble Industry in Kashmir (With Special Reference to District Kupwada)

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## ABSTRACT

Marble is a “minor mineral as defined in class (e) of section 3 of mines and minerals (Development and regulation) Act, 1957. The term is derived from the Latin word “Murmur”, which in turn is said to have been coined from Greek word “Marmorous”, meaning shining stone. It is known for its pleased colors, smooth and uniform texture, moderate hardness and silky feel. The occurrences of Marble have reported from many states viz Rajasthan, Gujrat, Haryana, Jammu & Kashmir, Andhra Pradesh and West-Bengal. Among all the states Rajasthan holds the first rank in Marble production in India. In Jammu & Kashmir Marble is extracted from 3 districts viz Kupwada, Leh and Kargil. The occurrence of Marble deposits in Kupwada district of Kashmir province was first reported in 1979 by the department of Geology and Mining. Within the short period of time many units were established and they were also able to export nearly 60% of their produce across India. But the period of prosperity for the Marble industrialists of Kupwada district does not remain for long period, there situation turned worse with the onset of military in 1989. The units were occupied by the armed forces resulting in losses worth crores of rupees to local industrialists. So, the present study titled as Marble Industry in Kashmir (with special reference to District Kupwada) has been conducted to highlight the profile of Marble industry in the Kupwada district of Jammu & Kashmir.

**Key Words:** Marble, Makrana Marble, Kupwada

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## INTRODUCTION

Marble is essentially a metamorphic product of the limestone. The development of marble is the consequence of metamorphic effects. The factors responsible for the development are the heat and pressure. Marble is metamorphosed limestone; composed of fairly pure calcite (a crystalline form of calcium carbonate ( $\text{CaCO}_3$ )). It is extensively used for sculpture, as a building material and has many other applications. Marble is a metamorphic rock resulting from regional or at times contact metamorphism of sedimentary carbonate rocks, either limestone or dolo stone. This metamorphic process causes a complete recrystallization of the original rock into an interlocking mosaic of calcite and/ or dolomite crystals. The temperature and pressure necessary to form marble usually destroy any fossils and sedimentary textures present in the original rock.

The marble occurs in the variety of color shades, its mosaic and stripped form giving different colored pattern to the rock. Some varieties show structural pattern or designs due to the presence of thin shale laminae, have either been silicified giving yellowish or greenish structural patterns. The common shades of the marble are the purple, green and grey, off white, yellowish and pink. No pure white or single colored variety {except green} has been observed. The different colored shades of the marble have been developed partly due to the presence of coloring pigments in the original sediments.

On the basis of the color, shades, and pattern, marble has been classified into 10 groups under Indian standard institution {ISI} {1130- 1969}.

1. Plain white marble
2. Panther marble
3. White veined marble
4. Plain black marble
5. Green marble
6. Pink adenga marble
7. Black zebra marble
8. Pink marble plain
9. Grey marble
10. Brown marble

## **REVIEW OF LITRATURE**

Vikrant V.Rastogi & K. Vikram: in their article “Export of Indian dimension stones, A critical analysis” observed that the market for the natural stone in recent years have diversified. They also mention a substantial increase in the export of granites, marble slate and other stones from Rs 1043.7 million in 1987-88 to 26146 million 2001-2. However they have mentioned that India’s contribution to world exports by tonnage is only 9.5% as compared to 19.5% of china’s export in the world market.

Ch Prakas Reddy: “Granite and marble industries are not comparable as there is a vast difference in the cost of production as well as price realization between the two. Marble industry is stated to be much profitable than that of granite since raw material wastage in marble industry is just 10% while it is 70% in granite industry. Further the cost of cutting a marble slab works out Rs 2 per sq. ft. while in case of granite it is Rs 6 per sq. ft.

Alok Kumar and Kulveer singh: in the article “Indian stone industry- An insight” the author tried to explain the different aspects of the stone industry relating to major type of stones viz marble, granite, lime stone, stand stone etc. the author mentioned that the stone sector in India provides employment to over a million people and it has grown at a remarkable pace over the past decade taking India to the fire front of the world stone scenario.

MP Jain: the author in his article “Rising Global Demand Adds Luster to Granite sector” drawn attention to the fact that India has wide variety of ornamental stones with vast deposit of Granite, Marble, Lime stone etc.

## **OBJECTIVES**

To carry out the assessment of the Marble industry in Jammu & Kashmir state with special reference to district Kupwada.

## **RESEARCH METHODOLOGY**

Keeping in view the objective of the study, both primary and secondary methods of data collection were used.

At primary level, data was collected by face to face unstructured interview. District Kupwada was given the special preference in data collection.

For the collection of secondary data various websites were consulted. Relevant material in the form of journals and Research papers were also consulted.

## **PRODUCTION OF MARBLE IN INDIA**

The increased demand of marble forcing industries to make huge production. Production of marble in India is mainly reported from Rajasthan, Uttar Pradesh, Gujarat, and in small quantities in Andhra Pradesh, Bihar, Haryana and Madhya Pradesh. Among all these Rajasthan is at number one in marble production. It accounts for over 88% of the total country’s production. Rajasthan is famous for production of Makrana marble. This is the best quality of marble in the world. Makrana is a town in the Nagpur district of Indian state of Rajasthan. Makrana is famous for the white stone marble mined from the mines around it. It is said that Taj Mahal was built from Makrana marble.

## **PRODUCTION OF MARBLE IN J&K**

In the state of J&K marble is found in three districts namely: Kupwada, Leh and Kargil. These three districts in our state are responsible for the production of marble as well as meeting the current demand for marble in Kashmir as well as outside state. The extractions of marble from these three districts are contributing towards J&K economy.

J&K has a mineral bearing of 13,334 square kms with 60% of the deposits commercially viable for mining and has a vast industrial potential. Officially we have 400 (unofficially 4000) million cubic meters of marble identified in these three districts of Kupwara, Leh and Kargil. The main contributor among these 3 districts is district Kupwada.

The occurrence of marble deposits in Kashmir valley have for the first time been reported by the department of Geology (the science which deals with the physical structure and substance of earth, their history, and the processes which act on them) and mining in the north western parts of Kashmir province in district Kupwada, during the year 1979. Seven marble mining and processing units were established in first phase in the frontier district of Kupwada in private sector and one in public sector. The unit holders laid out the required infrastructure and in a very short span many of the established units were able to export (60%) of their produce across India. The situation however turned for worse with the onset of military in 1989 and the units were occupied by the armed forces. The plant and machinery involved at these units rusted and became obsolete resulting in losses worth nearly to RS 15 crores to the local industrialists. Besides the liabilities of the financial institutions and contractual obligations added to the woes of the entrepreneurs and led to total erosion of their capital.

In the area of investigation that is Zirhama, Awoora and Trehgam[ areas of District Kupwada] the rock comprises a thick sequence of varied colored grey to yellowish limestone’s, Dirty grey quartzes sandstone, brownish sandy shales, grey to bluish slates and grey to greenish phyllites. The formation is further traversed with penal traps, cutting the whole formation at different stratigraphical levels and occurring both in extrusive form.

The formation as a whole is detrital in character showing low grade of metamorphism. The formation particularly the calcareous and arenaceous part of it is devoid of any fossil content or contains some un-recognized or in determined organic remains, but the sandy shale beds which lie in the core of the syncline and few limestone beds of Trehgam area contains some recognizable fossils. The prominent fossil bed being the sandy shale's exposed at Super near Marhama. This is exposed for an outcrop width of more than 5kms.

On the basis of the stratigraphical relationship, lithology and the development of marble, the formation exposed in the area of investigation can be divided into following four units:

1. Limestone and marble with shale's.
2. Quartzes sandstone and shale's with marble and limestone.
3. Marble and phyllites with limestone.
4. Marble and limestone with shales

#### **1. Marble and Limestone with Shale's**

This unit lies at the base of formation under study, but forms the most important feature of the area, is that it forms higher profile, the slopes of the east-west running mountain range with high peaks like that Phishaltong which forms the water shed between the kishan Ganga valley and the Jhelum valley. This unit is thickly bedded marble with minor limestone and shale's. This unit remains as yet un- surveyed but is expected to provide sufficient marble reserves.

#### **2. Marble and Phyllites With Limestone**

This consists of a thick series of alternating bands of calcareous and argillaceous bands. It is further traversed by numerous sills and dykes of the dioritic variety of panjal traps. It is dirty grey in color. The argillaceous{phyllites} and the calcareous{marble} parts show gradual and lateral passages into one another, giving an argillaceous character to marble while at places they form distinct bands. The unit has an outcrop width of more than 1km and most of the unit has been mapped and demarcated for marble blocks.

#### **3. Quartz Sandstone and Shales with Marble and Limestone**

Stratigraphically this unit over lies the marble and phyllites unit. It is composed of thick series of arenaceous and argillaceous deposits with subordinate calcareous faces occurring as intervening bands. Its significance as a potential marble bearing unit is limited. In its lower part, it mostly comprises quartz sandstone with minor shale bands. It is thickly bedded, dirty grey in color but dull in appearance.

#### **4. Limestone and Marble with Shales**

This forms the top most unit in the area of study and is exposed in two ridges leading to Trehgam and Bategam. In the central part of the valley it is completely eroded. These beds are further repeated synform fold. In the northern limb of this fold, the marble is very well developed whereas the southern limb is mostly un-effected and exposes mostly limestone.

### **CONCLUSION**

Marble is an aesthetic building material and is used in variety of construction works as paving slabs and tiles, wall panels and pillars etc. As a raw material, it is used in wash basins, trays etc. In addition it is used for great architectural and monumental purposes, besides as an ornamental stone. It is also used in small chips for mosaic flooring cement manufacture, chemical industry, in metallurgical furnaces as flux and isolator industries in minor quantities. Marble has been in use in our country for centuries.

With the development of activities and the advancement of technology its potential for the industrial utility both in medium scale and cottage industry has greatly increased particularly in view of its expect prospects. This aspect is very well depicted by the tremendous growth of marble industry in Rajasthan in the recent past. The development of marble industry in Kashmir has the better prospects as the marble has particular significance in being of varied color patterns and structural design. The green variety is unique and attractive and can also be used as an ornamental stone.

However the development of marble industry in Kashmir has its own peculiar problem, particularly when it is in its initial stage of development, one of the factors effecting its development is the climatic condition under which operations are to be conducted which restricts working period to 6 months or more. Secondly, lack of qualified mining personal, sufficient technical know-how and the transportation are the other features which may also effect its rapid development. Thirdly, and the most important factor still lacking for its development is the infrastructural facilities, like approachable roads, supply of water and power, work shop facilities, financial credits etc. with all these little necks, if properly planned under systematic programmers', marble has a tremendous scope for the industrial and social-economic development of the state. It would generate sufficient job opportunities as the domestic demand for the same is growing fast with considerable export prospects also. Thus a proper working atmosphere and the necessary facilities are essential for its growth and development.

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