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Jodhpur Sandstone: An Architectonic Heritage Stone from India

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Jodhpur Sandstone, extensively used in several regional architectonic heritage buildings in northwestern India, belongs to the Marwar Supergroup (Ediacaran - Cambrian). The Marwar Supergroup can be subdivided (from base upwards) into three stratigraphic units, namely Jodhpur Group (arenaceous), Bilara Group (carbonate facies) and Nagaur Group (argillaceous). Jodhpur Group, the main repository of Jodhpur Sandstone, is broadly subdivided into lower, middle and upper horizons. The lower horizon is marked by the presence of shaly sandstone and medium-to-coarse grained sandstone with intermittent bands of sandy shale. The middle horizon dominantly comprises medium- to- fine grained sandstone while upper one is characterized by a clastic facies comprising coarse grained sandstone with occasionally interbedded conglomeratic/gritty sandstone. The middle horizon sandstone is the most preferred dimension stone, being quarried within a 110 km stretch between Jodhpur and Satrava. It is the most durable and aesthetically appealing sandstone with attractive colours such as brown, red, pink and creamish pink.

The region also has a centuries old history of sandstone mining, as evident from the 15^{th} century architectonic monuments and structure such as Jodhpur Palace, the Meharangarh Fort, Clock Tower, Rai Ka Bag Palace, temple complex at Osian (popularly known as Khajuraho of Rajasthan for its intricate carvings in the sandstone), Phalodi Fort and the Royal Tombs at Mandore Garden, Umaid Bhawan Palace, Sardar Government Museum. Some modern day important buildings like the Hotel Maurya (Delhi) and Jodhpur Railway Station, are examples of continued use of Jodhpur Sandstone in contemporary times. The Palace of Sultan of Oman (UAE) and Karachi Harbour (Pakistan) are examples of international use of Jodhpur Sandstone.

Petrographic criteria allow a ‘quartz arenite’ nomenclature for Jodhpur Sandstone that has varying abundance of ferruginous cement apart from dominant quartz. The quartz framework grains are fine to medium in size, dominantly sub-rounded, largely monocrystalline and well coated by ferruginous (i.e. iron-oxides) cement. Increasing proportion of iron-oxides results in change in colour of the sandstone from pink to red to brown. The compositional, mineralogical and textural characteristics of the Jodhpur Sandstone make it conducive for chiselling and intricate carvings. Owing to its strength, durability, resistance to weathering and aesthetics, Jodhpur Sandstone is in vogue for contemporary buildings. Artefacts and handicrafts such as sculptures, garden accessories (fountains, garden chairs and tables, planters, garden lamps, etc.), miniature monument replicas, and flower vases, made of Jodhpur Sandstone are quite popular, both in India and abroad. The Jodhpur sandstone fulfils all the norms and criteria and we propose ‘Jodhpur Sandstone’ as one of the most suitable candidate for according Global Heritage Stone Resource status.