

## ABSTRACT

The Jutana Dolomite of the Cambrian age is exposed in the Khewra Gorge, eastern Salt Range, along the Salt Range Thrust (SRT). The dolomite is studied in detail at the outcrop and under the polarizing microscope. The microfacies of the Jutana Dolomite are investigated. Furthermore, uniaxial compressive strength (UCS) and ultimate tensile strength (UTS) has been performed to investigate the mechanical properties of Jutana Dolomite. In addition, the relationship of petrographic and mechanical properties of Jutana Dolomite is determined.

The Jutana Dolomite is comprised of dolomite, sandy dolomite and shale beds at the outcrop. Based on the microscopic study, the following microfacies are identified i.e. Siliciclastic Algal Laminated Dolomite Facies, Sandy Dolomite Facies, Dolomitic Sandstone Facies, Siliciclastic Dolomicrite Facies, Dolomicrite-Dolosparite Facies, Fine Grained Micaceous Sandy Dolomite Facies.

The mechanical properties of Jutana Dolomite are investigated with the help of the strength tests that are uniaxial compressive strength (UCS) and ultimate tensile strength (UTS). The results of the strength tests show that the Jutana Dolomite is a moderately strong.

Furthermore, the relationship of petrographic and mechanical properties of Jutana Dolomite is determined. The percentage of quartz plays a positive impact on the mechanical properties. The fractures present in quartz decreases the value of strength.

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## **Abbreviations**

MBT	Main Boundary Thrust
SRT	Salt Range Thrust
NPDZ	Northern Potwar deformed zone
KBF	Kalabagh fault
KF	Kurram Fault
MMT	Main Mantle Thrust
BP	Bannu Promontory
SR	Surghar Range
KR	Khisor Range
MR	Marwat Range
UV	Ultraviolet
PMDC	Pakistan Mineral Development Corporation
SE	South East
NW	North West
UCS	Uniaxial Compressive Strength
UTS	Ultimate Tensile Strength

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