Formula 1

Content placeholder

Related Content

Title	Type	Slug
Blast Design Excel Template v4.2	resource	blast-design-excel-template
Drill Rig Maintenance Inspection Checklist	resource	drill-rig-maintenance-checklist
Drilling Energy Benchmarking Dashboard (Power BI)	resource	drilling-energy-dashboard
TBM Advance Rate Prediction Curve Library	resource	tbm-advance-rate-library
Drilling Safety Compliance Standards Summary (ISO 45001, MSHA Part 46, AS/NZS 4360)	resource	drilling-safety-standards-summary

Detailed Explanation

The RMR system, developed by Bieniawski in the 1970s, is one of the most widely adopted empirical rock mass classification methods. The Field Survey Sheet serves as the primary instrument for consistent, on-site data acquisition—ensuring traceability, repeatability, and minimal subjectivity through predefined rating tables and descriptive anchors (e.g., 'joints slightly rough, undulating, no coating' corresponds to a specific score). Each parameter is assessed independently: uniaxial compressive strength is estimated via point load tests or laboratory data; RQD is measured from drill core recovery; joint spacing and condition are logged visually or with scanline surveys; groundwater inflow is quantified in liters per minute per 10 m tunnel length; and orientation adjustment accounts for adverse joint geometry relative to excavation geometry using stereographic projection or simplified charts. The sheet often includes space for sketches, photographs, location metadata (borehole ID, chainage, elevation),

and engineer verification signatures—supporting QA/QC protocols and integration into digital geotechnical databases. In practice, RMR values guide support design (e.g., bolt spacing, shotcrete thickness), excavation method selection (e.g., drill-and-blast vs. TBM), and risk assessment during construction, especially in mining and civil tunneling projects.

Key Components

#	Component
1	Uniaxial Compressive Strength (UCS) Rating
2	Rock Quality Designation (RQD) Rating
3	Joint Spacing Rating
4	Joint Condition Rating
5	Groundwater Rating
6	Orientation Adjustment Factor

Applications

#	Application
1	Tunnel support design optimization
2	Slope stability analysis for open-pit mines
3	Feasibility assessment of underground excavations

Related Concepts

#	Concept
1	Q-System
2	Geological Strength Index (GSI)

#	Concept
3	Rock Mass Classification

Tags

> geotechnical engineering, rock mass classification, field survey