SOME CHARACTERIZATION AND CLASSIFICATION SYSTEMS

Name of classification	Form and Type*)	Main applications	Reference
The Terzaghi rock load classification system	Descriptive and behaviouristic form Functional type	For design of steel support in tunnels	Terzaghi, 1946
Lauffer's stand-up time classification	Descriptive form General type	For input in tunnelling design	Lauffer, 1958
The new Austrian tunnelling method (NATM)	Descriptive and behaviouristic form Tunnelling concept	For excavation and design in incompetent (overstressed) ground	Rabcewicz, Müller and Pacher, 1958 - 64
Rock classification for rock mechanical purposes	Descriptive form General type	For input in rock mechanics	Patching and Coates, 1968
The unified classification of soils and rocks	Descriptive form General type	Based on particles and blocks for communication	Deere et al., 1969
The rock quality designation (RQD)	Numerical form General type	Based on core logging; used in other classification systems	Deere et al., 1967
The size-strength classification	Numerical form Functional type	Based on rock strength and block diameter; used mainly in mining	Franklin, 1975
The rock structure rating (RSR) classification	Numerical form Functional type	For design of (steel) support in tunnels	Wickham et al., 1972
The rock mass rating (RMR) classification	Numerical form Functional type	For use in tunnel, mine and foundation design	Bieniawski, 1973
The Q classification system	Numerical form Functional type	For design of support in underground excavations	Barton et al., 1974
The typological classification	Descriptive form General type	For use in communication	Matula and Holzer, 1978
The unified rock classification system	Descriptive form General type	For use in communication	Williamson, 1980
Basic geotechnical classification (BGD)	Descriptive form General type	For general use	ISRM, 1981
The Geological Strength Index (GSI)	Numerical form Functional type	For design of support in underground excavations	Hoek, 1994
The Rock Mass index (RMi) system	Numerical form Functional type	For general characterisation, design of support, TBM progress	Palmström, 1995

*) **Definition of the following expressions:**

Descriptive form: the input to the system is mainly based on descriptions
Numerical form: the input parameters are given numerical ratings according to their character
Behaviouristic form: the input is based on the behaviour of the rock mass in a tunnel

General type: the system is worked out to serve as a general characterisation
Functional type: the system is structured for a special application (for example for rock support)

In addition, several "local" systems where one or more of the systems listed above have been incorporated or adjusted

Crude links have been developed between the following systems:

Q-system ←→ RMR system
RMR system ←→ GSI system

Such links should be carefully used, as there may be significant inaccuracies or errors involved, see the paper Combining the RMR, Q and RMi classification systems (http://rockmass.net/files/combining_Q-RMR-RMi.pdf)

The unified classification chart (from Deere et al., 1969)

a descriptive, general system