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Autore	Maidl Bernhard
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2.3.2 Rock mechanics investigations; 2.4 The ground and its classification; 2.4.1 Ground; 2.4.2 Classification of the rock mass; 2.4.2.1 General; 2.4.2.2 Basic system of classification
2.4.2.3 Q System (Quality System)2.4.2.4 RMR System (Rock Mass Rating System); 2.4.2.5 Relationship between Q and RMR systems; 2.4.3 Standards, guidelines and recommendations; 2.4.3.1 Classification in Germany; 2.4.3.2 Classification in Switzerland ("Klassierung" according to the SIA standard); 2.4.3.3 Classification in Austria; 2.4.4 Example of a project-related classification according to DIN 18312 for the shotcrete process; 2.4.4.1 Procedure at the Oerlinghausen Tunnel; 2.4.4.2 Description of the tunnelling classes for the Oerlinghausen Tunnel; 2.5 Special features for tunnelling machines
2.5.1 General2.5.2 Influences on the boring process; 2.5.3 Influences on the machine bracing; 2.5.4 Influences on the temporary support; 2.5.5 Classification for excavation and support; 2.5.5.1 General and objective for mechanised tunnelling; 2.5.5.2 Classification systems and investigation of suitability for tunnel boring machines; 2.5.6 Standards, guidelines and recommendations; 2.5.6.1 Classification in Germany; 2.5.6.2 Classification in Switzerland; 2.5.6.3 Classification in Austria; 2.5.7 New classification proposal; 3 Structural design verifications, structural analysis of tunnels
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3.5.4 Combination of finite element and boundary element methods

Sommario/riassunto

This title presents additional services for the design and construction of tunnels, one of the most demanding challenges within engineering.