

**O 76. A PRACTICAL CLASSIFICATION TO SUSTAINABLE ROAD SLOPE STABILITY  
ASSESSMENT, ALANYA-KONYA ROADWAY, TURKEY: CASE STUDY**

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**ABSTRACT:** Today, a vast range of slope stability analysis tools exist for both rock and mixed rock-soil slopes. As is well known, Rock mass classification systems (RMR, SMR, GSI, Q, CSMR..etc) that describes quality of a rock mass, can be used to assess rock slope stability, hence, this paper intended to employing SMR classification, to prove that a rigorous rock mass classification will give more reliable if uncertain parameters are dropped and considered indirectly. The present study was carried out of 19 rock cuts in which 3 different causes of instability (Planer, Wedge, Toppling) along Hadim – Gevne dam segment of the Konya –Alanya roadway, located in southwest of Turkey. This segment was a problematic due to the existence of lithological units with variable characters (recrystallized limestone, dolomite – limestone, reefal limestone, conglomerate and Quaternary deposits). However, the cut slopes are located within recrystallized limestone, reefal limestone and dolomite– limestone hard to extremely hard and highly jointed. During field studies, most of the observed failure modes planer, wedge, toppling was controlled by discontinuities. In order to determine engineering geological properties of the rocks exposed along the roadway, then assess stability of the cut slopes, nineteen cut slopes were detailed identified. A detail field investigation has been carried out according to suggested methods by ISRM and all field observations/measurements parameters were recorded, which involved a detailed discontinuity surveys discontinuity conditions (dips/strikes, persistence, spacing, aperture, infilling) with scan-line method, geometrical relationship between slope and rock discontinuities (dips angles and slope), slope excavation methods and; underground water condition. Based on the field observations, stability analyses of the cut slopes and SMR study concluded that the slopes can be categorized into partially stable (50%), unstable (30%) and completely unstable (20%) with probable planar failure mode (20%), toppling failure mode (27%) and wedge failure mode (53%). Slope flattening with various angles, wire mesh and drainage ditches are suggested as a remedial solution to ensure slope stability of the studied road.

*Keywords: Road Slope Stability, Rock mass classification, SMR, field observations, Alanya-Konya roadway*