

GEOLOGICAL STRENGTH INDEX (GSI)

Project: Landslide (Khemakhali-Ghverki)

Coordinates: 0350645; 4657850

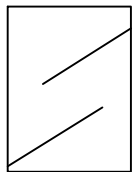
Outcrop N: GSI-3

Data: 18.08.2025

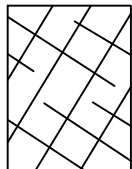
GEOLOGICAL STRENGTH INDEX FOR JOINTED ROCKS "GSI" (E,Hoek, P.Marinis, 2000)

From the lithology, structure and surface conditions of the discontinuities, estimate the average value of GSI. Do not try to be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI=35. Note that the tables does not apply to structurally controlled failures. Where weak planar structural planes are present in an unfavorable orientation with respect to the excavation face, these will dominate the rock mass behavior. The shear strength of surfaces in rocks that are prone to deterioration as a result of changes in moisture content will be reduced if water is resent. When working with rocks in the fair to very poor categories, a shift to the right may be made for wet conditions. Water pressure is dealt with by effective stress analysis.

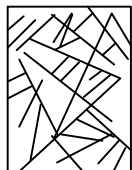
STRUCTURE



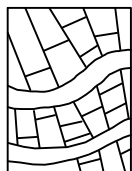
INTACT OR MASSIVE - Intact rock specimens or massive in situ rock with few widely spaced discontinuities



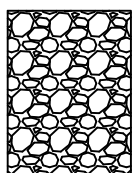
BLOCKY - Very well interlocked undisturbed rock mass consisting of cubical blocks formed by three orthogonal intersecting discontinuity sets



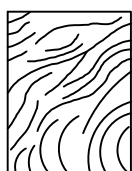
VERY BLOCKY - Interlocked, partially disturbed mass with Multi-face angular blocks formed by 4 or more discontinuity sets



BLOCKY/DISTURBED/SEAMY- olded with angular blocks formed by many Intersecting discontinuity sets. Persistence of bedding planes or schisosity



DISINTEGRATED-Poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces



LAMINATED/FOLIATED/SHEARED- Laminated or foliated and tectonically sheared weak rock mass. Foliation prevails over and other discontinuity set, resulting in complete lack of blockiness

SURFACE CONDITION

VERY GOOD

Very rough, fresh unweathered surfaces

GOOD

Rough, slightly weathered , iron stained surfaces

FAIR

Smooth, moderately weathered and altered surfaces

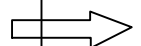
POOR

Slickensided, highly weathered surface with compact Coatings or fillings or angular fragments

VERY POOR

Slickensided, highly weathered surfaces with soft clay Coatings or fillings.

DECREASING SURFACE QUALITY



DECREASING INTERLOCKING OF ROCK PIECES



90

80

70

60

50

40

30

20

10

N/A

N/A

N/A

N/A