

Development of ground disaster restraint technology

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The 1/3rd of earthquakes occur in the Asia-Pacific region, reestablishment and restoration from many property damages and human sufferings caused by earthquakes are major social issues. Especially ground disaster, proposal of practical liquefaction prediction method and economical strengthening technology, which are suitable for the Asia-Pacific region, are needed. In this research, by analysing liquefaction and non-liquefaction sample cases, we examined effects of fine fraction, earthquakes and earthquake motion characteristics on liquefaction resistance. Moreover, based on the field research, we collected damage samples from various perspectives, such as seismic natural slope collapse and soil structures including embankments, we examined coseismic behavior of reinforced earth embankment.

As a result, we collected ground data of existing seismic liquefaction and non-liquefaction points, and made the data base. In addition, by analysing the data base, we clarified the mutual relations of dynamic shear strength ratio, fine fraction content, and parameter regarding earthquakes and earthquake motion characteristics. Moreover, by analysing damage samples of soil structures such as embankments, we clarified seismic behaviour of reinforced earth embankment collapse process in mountain areas.

Keyword : collapse sample, liquefaction, embankment, retaining wall, reinforced earth embankment