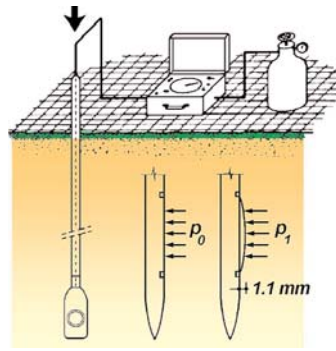


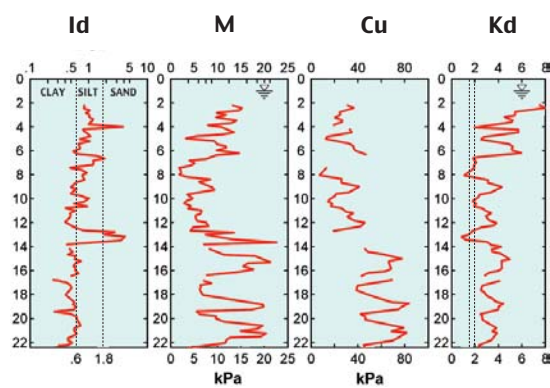
# DMT – Flat Dilatometer Settlements and moduli



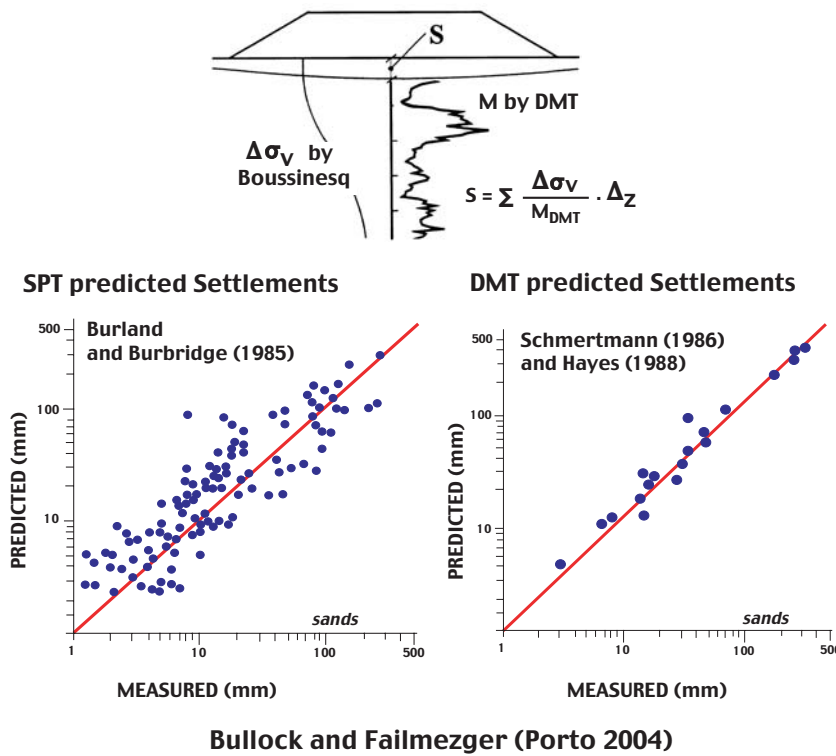
## ADVANTAGES

- quick, simple and economical
- quantitative design parameters
- highly reproducible results
- usable with most insertion machines
- used in over 40 countries
- international standards

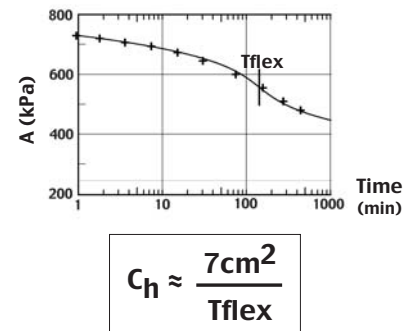
## Soil parameters



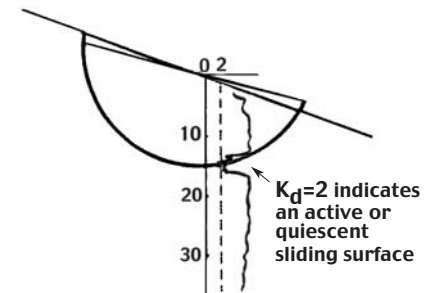
## Settlement prediction



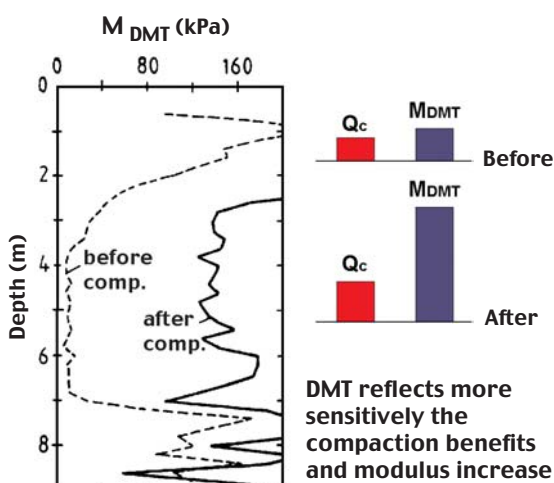
## Consolidation & permeability coefficients



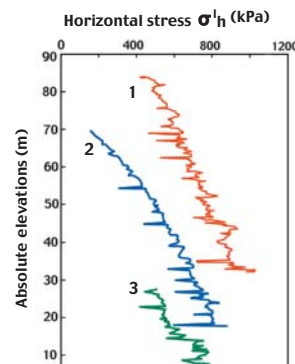
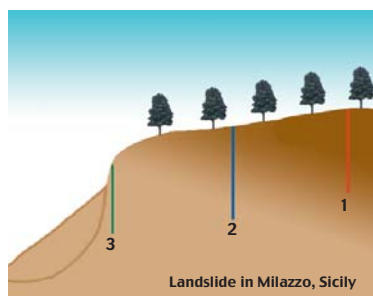
## Locating slip surfaces



## Compaction control



## $\sigma_h$ relaxation behind a landslide

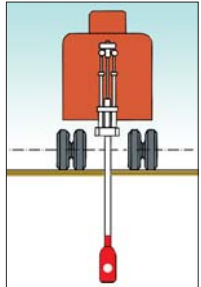


## Liquefaction Recommendations

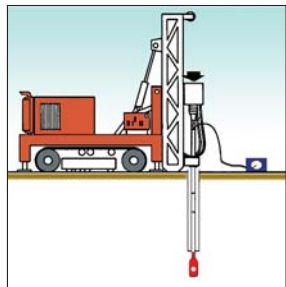
$K_d$  limits for safety vs liquefaction (for a magnitude = 7.5 earthquake)

Seismicity	$a_{max}/g$	$K_d$ min
Nonseismic	/	1.7
Low seismicity	0,15	4.2
Average seismicity	0,25	5.0
High seismicity	0,35	5.5

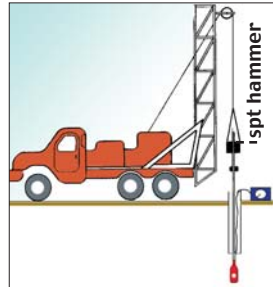
## Pushed by truck



## Pushed by drill rig



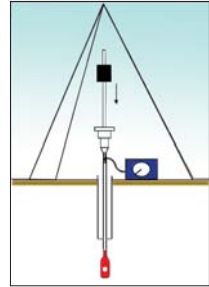
## Driven by drill rig



## Pushed by a fixed platform



## Driven by Spt Tripod



BLADE INSERTION

## APPLICATIONS

- Settlement Prediction
- Operative moduli  $M$
- Undrained shear strength  $C_u$  (clays)
- Soil Stratigraphy (sand, silt, clay)
- Compaction control
- Detects slip surfaces in clay slopes
- P-y curves for laterally loaded piles
- Sand liquefaction
- Coefficient of consolidation and permeability (clay)
- $\phi$  in sand
- OCR and  $K_0$  in clay
- Subgrade  $K_h$  for diaphragms
- FEM/Plaxis parameters
- Pavement subgrade modulus



EUROCODE 7 (1997). Standard Test Method, European Committee for Standardization Part 3: Design Assisted by Field Testing, Section 9: FLAT DILATOMETER TEST (DMT), 9 pp.



TC16 (2001). "The DMT in soil Investigations", a Report by the ISSMGE Technical Committee TC16 on Ground Property, Characterization from in-situ testing, 41 pp.



ASTM (2002). Standard Test Method D6635-01, American Society for Testing and Materials The standard test method for performing the Flat Dilatometer Test (DMT), 14 pp.