



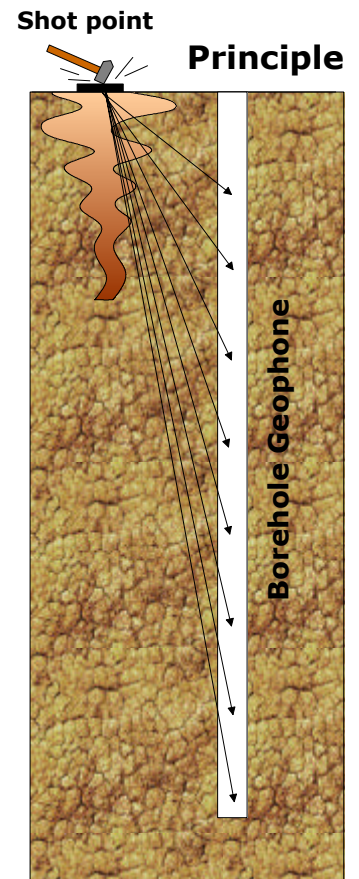
## Dynamic Soil properties using Downhole Tests

Seismic tests can be divided in two groups, surface tests and borehole tests. Surface tests are used to determine subsurface properties using geophones on surface and a surface seismic source. Borehole tests are bound to one or two boreholes which have to be drilled. Therefore, borehole tests are more expensive compared to surface tests but provide more accurate data with depth.

**The Downhole Test is a method which determines soil stiffness properties by analyzing direct compressional and shear waves along a borehole down to about 30 m.**

The aim of the downhole testing is to derive elastic rock properties such as Poissons ratio or YOUNG's modulus. Shear waves have to be generated at surface. A shear wave source (sledge hammer hit sideways) is used at surface and a coupled receiver system is moved in the borehole.

Traveltimes of the seismic waves are analysed and seismic velocity is calculated. Shear wave velocity can be transformed to soil stiffness.



### Test Result

