



geotomographie

manufacturer of seismic borehole equipment



DDS | Dual Downhole System

The Dual Downhole System (DDS) is used to receive P- and S-waves in dry and water filled boreholes in order to determine interval velocities. The DDS consists of two stations each equipped with tri-axial sensors. The stations are mechanically connected to each other to ensure the alignment of all horizontal sensors. Both stations are coupled to the borehole wall by a pneumatic clamping system (inflatable bladder). Air is supplied to the DDS through an electro-pneumatic hybrid cable with a Kevlar tension string. A magnetic compass shows azimuthal deviation to North and can be used to get the orientation of the DDS in the borehole. The cable is terminated by a connector to the seismograph.



Dual downhole system DDS with cable drum, pneumatic clamping mechanism (inflatable bladder) and compass.

Technical Details

Natural sensor frequency: 10 Hz
(others on request)

Sensor arrangement: Tri-axial

Operational depth: 100 m

Number of stations: 2

Station interval: 2 m

Station length: 620 mm

Station diameter: 65 mm

Station weight: 2.5 kg

Cable weight per metre: 145 g

Cable strength: 2150 N

Borehole diameter: 75 mm

Clamping system: Inflatable bladder

Orientation: Magnetic compass (+/-2.5°)

Depth indicator: Cable marking every 2 m

Connector: To any seismograph

Storage: On drum

DDS versus BGK

| DDS (dual downhole system) | BGK (borehole geophone) |
|--|---|
| Same source signal at each station | Source signal may vary from depth to depth |
| Interval velocity independent of trigger time | Accurate trigger time needed |
| Crosscorrelation travelttime analysis can be used to determine interval velocity | Errorneous travelttime picks may lead to unrealistic velocities |