



ap
van den
berg

ICONE DATA SYSTEM

For reliable and accurate CPTs



WHY THE ICONE?

- Calibrated according to ISO 22476-1:2022
- Calibrations under ISO 17025 accreditation
- Fully digital data system
- Real-time insight via Ifield software
- Plug & Play expandable
- Compatible with new and existing rigs
- Sustainable and cost-effective in use

**PROBE
THE ▲
FUTURE**



ICONE DATA SYSTEM

A.P. van den Berg develops advanced Cone Penetration Testing (CPT) data systems for accurate and reliable soil investigation. At the heart of this is the Icone data system, providing real-time insight into subsoil structure and properties to reduce risk in onshore and offshore civil and infrastructure projects. A.P. van den Berg provides ISO/IEC 17025 accredited calibrations according to ISO 22476-1:2022.

The Icone data system consists of several smart components that work seamlessly together:

- **Icone** – the digital piezocone
- **Data transfer** – via unisex cable or Optocone
- **Icontrol** – data acquisition, combining measurement data with depth
- **Ifield software** – data processing with GEF export and GRU integration
- **Ifield** – data visualization with direct graphical display of results on site.



Icone: modular, digital and reliable

The Icone is fully digital and offers significant advantages:

- Fully digital output for all measurements.
- Calibration of the complete signal chain, including analog-to-digital (AD) conversion.
- Calibration data stored in the cone, eliminating risk of data loss.
- Internal memory for up to 20 average CPTs.
- Compensation for temperature effects during measurement.
- Insight into measurement uncertainty in line with international standards.

Accurate measurement of essential soil parameters

The Icone measures the following parameters as standard:

- **Cone tip resistance (qc)** – tip resistance indicating soil strength and type.
- **Sleeve friction (fs)** – resistance measurement essential for soil classification.
- **Pore water pressure (u2)** – pressure exerted by water, providing insight into permeability and stress distribution.
- **Inclination (Ix/Iy)** – ensures accurate vertical positioning and correct depth determination.

Temperature is also measured to assess stability and enable compensation where required.



Icontrol – the central datalogger

The Icontrol is the central data logger of the Icone system. It provides:

- Real-time data acquisition
- Stable data transfer to PC or laptop
- Power supply to all connected measurement devices
- Full compatibility with depth encoders
- Combined with Ifield software, Icontrol enables fast interpretation directly on site.



Plug & Play expandable: click-on modules

The Icone data system features a modular design and can be easily expanded with innovative click-on modules, including:

- **Icone Seismic Module** – Measures seismic wave speed to determine soil stiffness—critical for stability and earthquake analysis.
- **Icone Vane** – Detects variations in electrical conductivity, helping identify layer changes, salt layers and contamination.
- **Icone Magneto Module** – Identifies metal objects such as UXO, pipelines, sheet piling, and foundations for safety and risk assessment.
- **Icone Conductivity Module** – Measures undrained shear strength in soft soils, ideal for stability analyses.



Offshore Applications: Deep Water Icone

For deep-water offshore projects, A.P. van den Berg offers the Deep Water Icone. This pressure-compensated system is designed for depths of 1,500 to 4,000 meters and delivers stable, reliable measurements even under extreme conditions.

ISO/IEC 17025–accredited calibrations

Since 2020, A.P. van den Berg has been providing ISO/IEC 17025–accredited calibrations. Recently, the scope of our accreditation has been updated in accordance with ISO 22476-1:2022, reflecting the latest standards in geotechnical soil investigations and ensuring the highest levels of reliability, accuracy and precision in all measurements.





Technical specifications

Feature	Range / Nominal – Maximal
Cone tip resistance (qc)	75 – 150 MPa (standard) / 7.5 – 15 MPa (sensitive)
Sleeve friction (fs)	1-3 MPa (standard) / 0,15 – 0,3 MPa (sensitive)
Pore water pressure (u2)	2 – 3 MPa / 10 – 15 MPa
Inclination (Ix/Iy)	-30° to +30°
Temperature	0 °C to 40 °C
Resolution	24 bits (Ix/Iy 16 bits)
Memo function	116 Mbit (approx. 8 hours of CPT)
Cone tip area	5, 10 and 15 cm ² Icone

Accessories & options

- **Icontrol** – power supply and data connection via USB
- **Depth encoder** – steel cable, 2,000 pulses per meter
- **Unisex measuring cable** – for single or multiple connections
- **Touchscreen PC** – rugged design, suitable for field conditions
- **Double pore water pressure** – u1 and u2
- **Sensitive version** – available with Icone 10 cm² only
- **Non-magnetic version** – available with Icone 15 cm² only

For more information

