

# Profound – Sonic Integrity Testing



SIT  
SIT<sup>+</sup>  
SIT<sup>pro</sup>

## Profound SIT-series

(SIT.20100/..200/..300)

With a model of the SIT-series you can accurately and efficiently verify the integrity of foundation piles after installation. Using a SIT-model enables you to check the pile length and to detect irregularities and/ or cracks in the pile shaft.

The SIT-models are robust, fully digital, easily portable and user-friendly. One person can test numerous piles per hour. The built-in Lithium battery allows for up to 8 hours testing (SIT<sup>+</sup> and SIT<sup>pro</sup>).

The measurement is performed by hitting the pile head with a hand-held hammer and measuring the response on the head with the sensitive and lightweight SIT-accelerometer. The SIT presents the measurement signal directly on screen, enabling a direct check of the quality of the measurement.

If approved the measurement signals are stored in the memory of the SIT system together with relevant information such as, wave velocity, pile number, date, time, amplification factor and filter length.

Due to the enhanced features of the SIT-acceleration sensor including very low noise level, you are able to detect even smaller defects in piles. Afterwards you download the measurement results to a Windows computer via USB for further analysis.

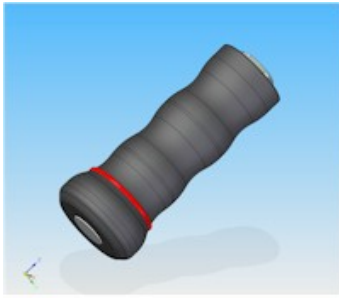
Technical specifications SIT-series	
Housing	Robust hardened case
Material	Hard anodized aluminium
Protection rating	IP65 according to DIN 40 050/ IEC 529 (connector caps closed)
Temperature range (operating)	- 20°C to + 60°C
Display	Type: TFT-LCD Size: 5,7" (diagonal) Resolution: 640 x 480 pixels (RGB colour)
Battery pack	Integrated Lithium battery pack
Clock stability	Within 5 minutes/ year at 25°C
Storage capacity	1 GB
Data retention	10 years at 25°C
AD-converter	24 bits converter
International standards	ASTM D5882-07, CUR aanbeveling 109, EA Pfähle April 2007, AFNOR NF P94-160-2 1993, NF P94-160-4 1994*
I/O functionality	Acceleration sensor, mini-USB, battery charger and Instrumented Hammer*
System weight	2.3 kg
System dimensions (L x W x H)	248 mm x 164 mm x 38 mm
Extra	Permanent connection check during operation
PC software program	Download and presentation software package, with basic analysis functionality. System requirements is Windows XP (or higher).
* Instrumented Hammer SIT <sup>+</sup> / SIT <sup>pro</sup>	



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# Profound – Sonic Integrity Testing



## SIT-accelerometer

### Profound SIT-accelerometer (SIT.20800)

The Profound accelerometer for the SIT-series has been custom-designed for high-performance sonic integrity testing of installed foundation piles.

#### Advanced design

The advanced design of the accelerometer in combination with the carefully selected components resulted in an ergonomic, lightweight and high-end sensitive accelerometer with high linearity and repeatability. The lightweight sensor registers exceptionally well the response to the hammer blow.

Due to this combination users can perform measurements efficiently, as the high-quality sensor can be placed fast and very accurately on the pile head. Thus the system generates high-quality reflectograms, providing users with accurate information about the pile shaft and possible defects.

#### Digital ID

The SIT-accelerometer has an electronic datasheet, which also includes the serial number. Therefore, the source of measurement data can always be traced.

#### High-performance

The SIT-accelerometer in combination with the SIT system\* provides high signal stability and extremely low noise level. Thus capable to detect even smaller defect in piles.

\* More information about the Profound SIT-range can be found in the technical specifications of the SIT-series.

Technical specifications SIT-accelerometer	
Acceleration range, Linear (ASTM req.)	$\pm 500 \text{ m/s}^2$
Acceleration sensor type	Delta shear with thermal isolation
Nominal sensitivity	10 mV/g
Resonant frequency	32 kHz
Cable	Highly flexible and reinforced spiral cable with length 1 – 2.5m
Dimensions	OD = $\emptyset$ 25 mm x H = 75 mm
Material	Fibre reinforced synthetics
TEDS	Electronic ID, according to IEEE std. 1451.4
Temperature range (operating)	- 20°C to + 60°C
Protection rating	IP65 according to DIN 40 050/IEC 529
Total sensor weight (incl. cable)	60 g (140 g)
Connectors	High quality waterproof IP66 (when connected to the system)
Extra	Permanent connection check during operation



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