



Piletest uses the Fischer LP360™ 7-pin connector in its state-of-the-art Pile Echo Tester instrument to test pile foundation integrity



Piletest's Pile Echo Tester (PET) integrating the Fischer LP360™ 7-pin connector

Fischer Connectors and Piletest (piletest.com), a leader in rugged instrumentation applications, collaborated in 2018 to provide reliable connectivity for integrity test instruments for piles used in building foundations. The project's key challenge was to replace the connector initially used in Pile Echo Tester (PET) that Piletest had developed for "pulse echo testing" or "low strain testing" in harsh environments. The connector was not rugged enough and broke under heavy outdoor use by technicians. The new version of PET now uses the Fischer Freedom™ Series chosen by Piletest for its durability (10,000 mating cycles) and the 90-degree low profile of the Fischer LP360™ 7-pin connector, which matched their key requirements for ruggedness, ergonomic design and ease of use.



INDUSTRY

Construction

APPLICATION TYPE

Instrumentation

LOCATION

UK (head sales office)

PROJECT OVERVIEW

Piletest uses Fischer Freedom™ in its Pile Echo Tester (PET). Fischer Connectors first produced a prototype using Piletest's own coiled cable to test mechanical constraints, then two prototypes to test electrical constraints. Piletest's specific requirements were twofold: on the one hand, their design engineers needed a solution that could easily be integrated into their device; on the other hand, their end users needed PET to be rugged, IP68-sealed, fully cleanable and ultra-easy to connect. As a result, Piletest chose the Fischer Freedom™ Series full connectivity solution: the Fischer LP360™ 7-pin plug equipped with a straight USB 2.0 cable and its receptacle directly integrated into the housing of PET.

KEY CHALLENGES

- Ensure reliable connectivity in harsh environments
- Withstand heavy outdoor use
- Offer plug & use technology for an easy-to-handle device



CHALLENGES & OPPORTUNITIES

Equipment loss

Piletest had many product losses due to technicians accidentally destroying the PET in harsh construction site conditions. As Gadi Lahat, VP Business Development at Piletest explains: *“Our users often throw our PET in their trunk like a piece of rock. They drop it in puddles or on the concrete surface of a pile and expect the PET to keep on working on hundreds of pile tests per day. The PET is fully molded, and if a connector breaks, there’s no way to fix it in the lab.”* Piletest was therefore looking for a connector that was built to last.

Collaborative design

Piletest collaborated with Fischer Connectors to design a connectivity solution meeting its stringent PET performance and reliability requirements. It chose the new Fischer LP360™ 7-pin connector from the Fischer Freedom™ Series as the basis for a cable assembly project because of its durability and its 90-degree low profile, which combined ruggedness with ergonomic design and ease of use. Fischer Connectors manufactured a series of prototypes using Piletest’s original coiled USB 2.0 cable to test mechanical and electrical constraints, followed by solutions using Fischer Freedom’s standard straight USB 2.0 cable. The easy integration of the LP360™ receptacle into the PET’s housing was also a key design-in factor.

Enhanced performance

The PET’s wireless option is used by many testers in the field. The Fischer LP360™ connector’s low profile makes the PET compact and comfortable and easy to handle. When using the cable for charging or communication, testers can plug and use the equipment with a simple click, preventing equipment damage thanks to the LP360™ connector’s 360-degree mating freedom and IP68-sealed, blind-mate and non-magnetic quick-release locking mechanism. Gadi Lahat says: *“Though we have lots of state-of-the-art knowhow and technology in our PET instrument, the connector was ‘the weak link’. The cable is now tough enough to withstand users stretching it between the field computer and the right clear spot on the pile head.”* The LP360™ has enhanced the PET’s performance, making both designers’ and users’ lives easier.

For more information: fischerconnectors.com/piletest

THE SOLUTION

Selected connectivity solution:

Cabled plug of the LP360™ 7-pin connector with the panel-mounted receptacle directly integrated into the device.

Main requirements:

Ruggedness, low profile, durability, ease of use.

Added value:

With its added value in usability and integrability, this solution turned the connector from being ‘the weak link’ into ‘a performance & quality enhancer’.

Business benefits:

- Enhanced product quality and reliability in harsh field conditions on construction sites
- Durability through hundreds of pile tests per day
- Cost efficiency thanks to a better project cost to product life-cycle ratio

“We chose the Fischer Freedom™ connectivity solution because we had to replace our existing connector which broke under heavy outdoor use by technicians. The 90-degree low profile and ergonomics of the Fischer LP360™ 7-pin connector, as well as its plug & use technology and durability, perfectly match the requirements of our equipment which we use in harsh environments such as mud, rain, freezing tundras and deserts”.

Gadi Lahat

VP Business Development, Piletest

REIMAGINING CONNECTIVITY
TOGETHER

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