



MOLEX TEAMS WITH PILE DYNAMICS TO TRANSFORM QUALITY TESTING OF STRUCTURAL FOUNDATIONS

IMPROVED PRODUCT QUALITY, FASTER TIME-TO-MARKET AND RELIABLE SUPPLY CHAIN ENSURE GLOBAL ACCESS TO WORLD'S LEADING DYNAMIC FOUNDATION TESTING SOLUTIONS

CHALLENGES

- Unprecedented global demand for industry-leading solutions led to previous product delivery and quality problems
- Rapid business growth required seamless technology collaboration
- The ability to ensure reliable delivery was exacerbated by pandemic-induced supply chain disruptions

SOLUTION

- Molex's proven connector and cable solutions resolved product quality issues
- World-class supply chain ensured production schedules were met despite significant headwinds during pandemic
- Industry-leading automation kept pace with rapid growth trajectory of industry-leading solutions

BENEFITS

- Products consistently delivered ahead of schedule
- Seamless collaboration facilitates continuous product testing innovations
- With a million product orders, business has doubled year over year

CASE STUDY



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*George Piscsalko
President, PDI*

Whether driving over the Golden Gate bridge, entering a skyscraper or watching a ballgame at a football stadium, you're depending on strong foundations to support massive infrastructures that surround you without fault or failure. As the largest manufacturer of dynamic foundation testing equipment in the world, Pile Dynamics, Inc. (PDI) continuously elevates the standards for product quality, durability and innovation.

As the company behind many well-tested foundations for the past 50 years, PDI's products have improved the quality assurance of deep foundations on jobsites in more than 100 countries worldwide. The company's flagship Pile Driving Analyzer® (PDA), a high-strain dynamic load testing and pile driving monitoring system, is considered the gold standard in the industry.

"We're a technology company that happens to service the deep foundation industry," says George Piscsalko, President of PDI. "What makes this company special to me, as an engineer, is that we have free rein to be as creative as we need to be and leverage the latest technology to continually innovate and lead the way."



THE REINVENTION OF DYNAMIC FOUNDATION TESTING

From its inception, PDI has seized the opportunity to transform the traditional foundation testing industry, which has been slow to improve what have been traditionally costly, complex and time-consuming testing methods. Engineers at PDI were confident they could use leading-edge technology to reduce the material, time and cost required while lowering project risk. "What was most interesting to us was PDI's clear position as a disruptor in this industry," says Daniel Koch, Senior Product Manager, Global Consumer & Commercial Solutions Division, Molex. "They use technology and electronics in a way this industry hasn't seen before."

The company develops quality assurance and quality testing equipment as well as technologies deployed on a vast range of both on land and in water deep foundation structures. "We can test 100% of the cross-section of the full-length of various types of deep foundation structures, both onshore and offshore," adds George Piscsalko. "That's critically important, as other methods only test the core of the foundations and not the exterior."

Moreover, other testing methods can take up to 10 days to produce results, whereas PDI has perfected testing capabilities to yield accurate results in hours. "Our test is much faster, more comprehensive and can be completed at half the cost of other testing methods," explains George Piscsalko. "All of our data is stored in the cloud, so no site visits are needed, which further reduces time, cost and carbon footprint."

As a result, PDI experienced a groundswell of demand for its testing products from engineering design firms around the world. "We're a very customer-driven company," adds George W. Piscsalko, Production Manager at PDI and son of the president. "Each product is unique, and we cater to our clients, so there's a lot of detail and focus on quality in getting orders ready to be fulfilled."

This overarching focus on quality and on-time delivery exposed reliability and availability issues with an existing supplier. As PDI continued to add sophisticated technologies and sensors, a more progressive, proactive connectivity solutions provider was needed to support the growing business. With Molex offering a drop-in connector that fit the bill, PDI decided to give it a try. "Immediately it was a completely different picture," recalls George Piscsalko. "We realized early on this was a company we could solve problems with and really help move our business forward."

Both companies have this 'never say no' attitude, which I think has contributed to a shared determination to find innovative ways to solve critical challenges.

*Daniel Koch
Senior Product Manager,
Global Consumer & Commercial
Solutions Division, Molex*

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SHARED COMMITMENT TO QUALITY AND COLLABORATION

Working closely with Molex, PDI significantly improved the quality of connectors and cable assemblies for its expanding product portfolio. Molex fully understands the company's quality and durability requirements based on its extensive work in demanding automotive, consumer electronics, healthcare and data center environments where ruggedized solutions must perform flawlessly.

"We get 100% yield from Molex, so our quality issues have completely disappeared," notes George Piscsalko. With quality issues resolved, the teams continually collaborate on different solutions for PDI's diverse customer base. For example, PDI is one of the few companies in the world that uses underwater splice connectors, installed hundreds of feet underwater where pressure is extremely high. The traditional way of testing these foundations is to cast in pipes and then do an ultrasonic scan and insert cages that often don't fit horizontally on a site, which can happen in crowded urban centers. If that occurs, construction crews are required to manually insert the couplers, which can result in serious accidents.

Molex introduced a solution that passed all PDI's rigorous internal testing benchmarks while eliminating manual intervention. This enables construction projects to be completed in less time and with fewer risks to construction crews, as it completely alleviates the need to manually insert couplers.

In addition, Molex remains in lockstep with PDI as their technology advances. A prime example is PDI's Thermal Integrity Profiler (TIP™), which evaluates concrete quality both within and outside the rebar cage. This innovation produces results fast and enables the findings to be accessed through the cloud from anywhere in the world. Not only does this level of accessibility enable PDI to stand out in the industry, but Molex also incorporates sensors directly into the Thermal Wire® cable to speed and simplify production.

The result: instantaneous testing results that identify areas of concern and potential construction issues far earlier than other integrity test methods, which can take hours or days to deliver feedback. "In an industry where time is money, this makes construction projects much more efficient, which is a major innovation for our market," says George W. Piscsalko.



MEETING RECORD PRODUCT DEMAND AMID SUPPLY CHAIN CONSTRAINTS

Over the past five years, PDI's business has experienced exponential growth aided by Molex's focused attention to detail. Following initial orders of 250,000 custom cable assemblies, Molex received orders for millions of assemblies to fulfill additional orders. In response, Molex developed custom automation solutions to streamline and speed operations.

"We took the traditional way of building cable assemblies and added custom automation, which increased efficiencies

while ensuring quality remained at the same level," says Koch. Incorporating automation also ensured that PDI could build prototypes faster and focus on design, leveraging new and different technologies while ensuring the global demand meets with increasing scale and scope of product development.

During the COVID-19 pandemic, PDI was forced to balance escalating business demands with unprecedented supply chain constraints. As one of the few companies in the world using state-of-the-art technology for quality assurance for deep foundations, PDI was particularly challenged with potential supply chain disruptions. To ensure a consistent flow of products, Molex teams encompassing supply chain, procurement and logistics experts, worked to keep raw materials available to ensure lines maintained required levels of production.

"Sometimes, we'd look at our global supply and see very little out there," recalls George Piscsalko. "Despite that, the Molex team always managed to find connectors and deliver them not only on time, but even early. The team always says, 'Don't worry, we'll deliver,' and they're true to their word. It's not often you can say that."

Molex scaled volume production to meet growing demands without interruption or delay. "Both companies have this 'never say no' attitude, which I think has contributed to a shared determination to find innovative ways to solve critical challenges," adds Koch. Culture, cooperation and a desire to improve industry testing standards has created what both organizations consider to be a lasting collaboration.

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*Daniel Koch
Senior Product Manager, Global Consumer
& Commercial Solutions Division, Molex*





A LONG-TERM RELATIONSHIP TO ACHIEVE LONG-TERM GROWTH GOALS

With a steady, reliable supply chain and industry-leading connectivity solutions, PDI expects to double its business year over year with a 2023 sales pipeline of about two-to-three times bigger than current levels. As a crucial ally in this growth trajectory, Molex is positioned to ensure PDI maintains the product quality that defined the company as an industry leader while exploring new opportunities. "To us, Molex is more than a vendor," notes George W. Pisciasko. "They're an integral part of our business, bringing solutions to the table we really value and delivering them not only on time, but often ahead of schedule."

Molex's cable assemblies assist in the early prototype process, concept design and development phases, focusing on reducing time-to-market while providing best-in-class preproduction support, quality checks and cost-reduction support. Additionally, Molex's industry-certified manufacturing plants support design manufacturing from early production to high-volume, fully automated assembly.

As PDI moves to more sensor-based solutions, Molex is primed to play an instrumental role in enabling the company to meet increasing global demand while reaching untapped global markets with agility. Molex also brings in additional expertise, most recently from its antenna group, to help PDI troubleshoot existing products while supporting planning and development for next-generation solutions.

Though the relationship between the two companies began with cable assemblies, it has evolved, enabling PDI to bring the newest, cutting-edge technologies to market while revolutionizing the way foundations are tested, from pour to production. "Molex and Pile Dynamics have really been a team since day one, and that relationship has only strengthened as our work together has evolved," concludes George Pisciasko. "We view Molex as a strategic collaborator that will be here for the long-term growth of our products and business."



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*George W. Pisciasko
Production Manager, PDI*

ABOUT PILE DYNAMICS, INC.

Pile Dynamics, Inc. (PDI) is the world leader in developing, manufacturing and supplying state of the art QA/QC products and systems for the deep foundations industry. For additional information visit www.pile.com.

ABOUT MOLEX

Molex makes a connected world possible by enabling technology that transforms the future and improves lives. With a presence in more than 40 countries, Molex offers a full range of connectivity products, services and solutions for markets that include data communications, medical, industrial, automotive and consumer electronics. For more information, visit www.molex.com.

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