



GPC Dynamic Load Test Pile Driving Analysis

Advanced, Friendly, Robust

Product Data Sheet



PILETEST

Company profile

At Piletest we develop and manufacture systems for quality control / quality assurance of deep foundations since 1996. Our focus has always been on quality, modularity and ease of use.

Quality

All products undergo extensive testing, including pressure chamber, vibration table, heat oven and more, and carry a full three (3) year warranty (Excluding physical damage).

Modularity

We focus on building pile testing systems, not on computers. Therefore, all our products connect to a standard PC, Laptop, Tablet, Smartphone via USB, Bluetooth or WiFi connection. This approach minimizes your downtime and keeps you up-to-date and independent, and reduces your overall costs.

Ease of use

We take simplicity and usability very seriously. As a result no formal training is usually required and our users usually start using our systems out-of-the-box within minutes. Our ease of use knowhow, is based on years of field work before started designing our own equipment.

Support

It is important for us, as well as it is for you that your final product—the *test report*, is of the highest standards. To help you with this we provide free on-the-job training. We also support you with the analysis of your first projects, and can revise the next ones and comment on the following ones, until we are both satisfied with the results.

GPC Dynamic Pile Testing Systems.



Piletest's GPC is the next generation of dynamic pile testing systems. It is designed with simplified software and higher ease of use than past systems. The GPC system was started by Professor George G. Goble, the pioneer of dynamic pile analyzers. The GPC complies with ASTM D4945 - Standard Test Method for High-Strain Dynamic Testing of Deep Foundations and Eurocode EN ISO-22477-4.

To test a pile, you need to connect only two dual-purpose sensors to it. The system box can be attached to the pile under test and, via a lossless wireless communication, sends all the monitored data to your computer. This concept makes the construction site work much easier and faster to operate.

To measure four (4) sides of a pile, two main box systems can be operated concurrently with a dual WiFi connection computer. The collected data is processed by three (3) state-of-the-art s/w packages:

GPC Acquisition — For collecting the sensors data and presenting real-time driving plots

GPC Review — Reporting of test results and capable of automatic signal matching

N_GAPA—An Automatic Pile Analysis software for signal matching analysis. Proven to be equal to CAPWAP, and faster.

Main Advantages

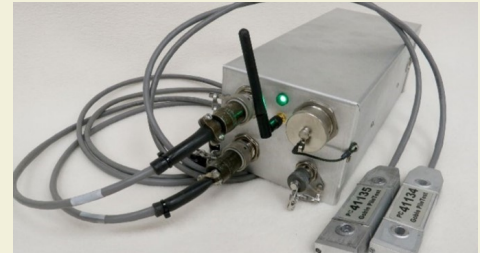
Lossless Wireless Transmission: The signal is digitized in the transmitter box. The system is wireless by design using WiFi IEEE802.11ac, which is more reliable than Bluetooth or 2.4 GHz radio of other dynamic pile testing systems.

Cost Efficient: The transmitter box has a wire connection (optional). It uses a low-cost standard CAT5 Ethernet cable (vs. expensive DLT cable) reaching up to 100 meters. Digitization ensures zero signal loss on 100m cable length.

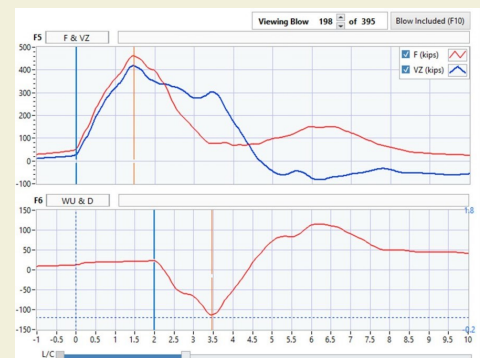
Simplicity: Single data box for both sides of the pile.

Fast to operate: Combination transducer, strain gauge, and accelerometer are combined on one bolt-on sensor minimizing drilling time and complexity.

Intuitive Programming: GUI has been purpose-built to



GPC System works with any MS Windows Tablet



Four (4) clear graphs:

Fi, VZi, F&V, WU&D

(All are presented in L/c scale. Live capacity plot, presenting soil resistance per each blow)



On site

GPC Pro Wireless - Technical Specifications

Physical (Ver 1.4)	Housing	Industrial grade DAC enclosed in a durable stainless steel and aluminum housing
	Dimensions	102 mm x 160 mm x 305 mm (Ver 1.3) 82 mm x 108 mm x 280 mm (Ver 1.4)
	Weight	2.3kg (Ver 1.3) 1.9kg (Ver 1.4)
	Temperature range	-20°C to +55°C (Operating) -40°C to +80°C (Storage)
Sensors	Strain Gage:	
	Resolution	0.5 me
	Sensitivity	500 me/mV/V Nom.
	Nonlinearity	<0.05%
	Range	-3600 to +3600 me
	Accelerometer:	
	Resolution	0.01 g
	Sensitivity	0.060 g/mV/V Nom.
	Nonlinearity	<0.05%
	Range	-2000 to +2000 g
Standards	ASTM 4945	Meets or exceeds ASTM D4945 - Standard Test Method for High-Strain Dynamic Testing of Deep Foundations and EuroCode EN ISO-22477-10.
	EN ISO-22477-10	
Performance	Pile lengths	2m to 100m
	Pile Type	Unlimited (Concrete, Steel, Timber)
Requirements	Computer (included)	Microsoft Windows OS Win 7 /Win 10/ Win 11 1366x768 resolution or better USB port WiFi 802.11ac Recommended for BYOD: Tablet PC (outdoor display)


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GPC - Ordering Information

Part number	Description		Comments
GP101	Main Box		To connect 2 GPC dual sensors With WiFi connection
GP201	Dual sensor Accelerometer and Strain Gage		2 sensors in one device. With connection cable.
GP301	<u>Optional</u> 50m cable from main box to computer		This is a backup option for the wireless connection. Uses standard CAT5 cable.
GP302	<u>Optional</u> 100m cable from main box to computer		
GP001	Complete GPC System		Including: • Main Box with Wi-Fi 802.11ac connection • 4 X Dual sensor (Accelerometer and Strain Gage, 2 main and 2 Backup) • N_GAPA Automatic Pile Analysis software • Calibration Certificate • Computer preloaded with GPC Acquisition



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N_GAPA Automatic Pile Analysis software



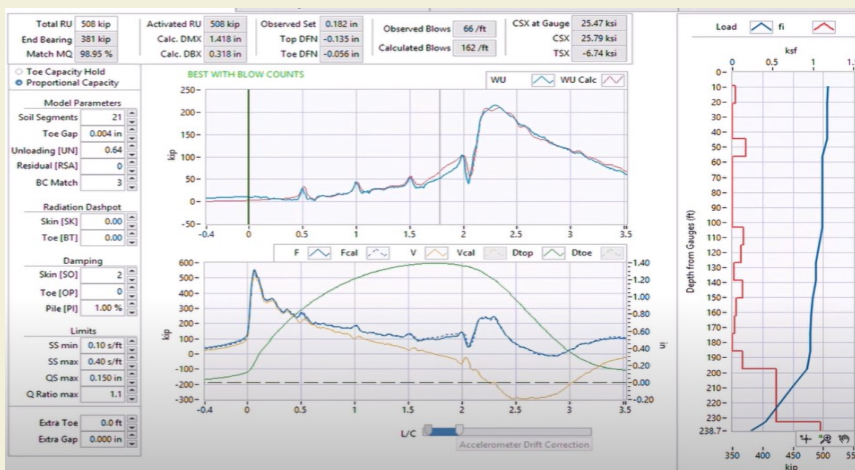
Piletest's N_GAPA is the next generation of automatic pile analysis software for dynamic pile testing, comparable to and better than CAPWAP*. N_GAPA software estimates the total bearing capacity of a pile or shaft, as well as resistance distribution along the shaft and at the toe. It is easy to use and super-fast. N_GAPA and CAPWAP results are the same, which can be used on any pile type/shape/ or size. On the right are test results using the GPC system with CAPWAP vs. GPC results with N-GAPA using the same pile simultaneously. The results show a strong correlation between N_GAPA and CAPWAP* analysis software.

#	Type	Pile	RU activated				Difference to CAPWAP			Lumped JC
			CAPWAP	N_GAPA	iN_GAPA ₁	iN_GAPA ₂	N_GAPA _A	iN_GAPA ₁	iN_GAPA ₂	
1		240-ft	492.7	497.0	492.6	505.5	0.87%	-0.02%	2.60%	0.49
2	H Pile	24.1-ft	366.5	362.0	348.2	359.4	-1.23%	-4.99%	-1.94%	10.00
3		24.5-ft	356.9	357.0	344.5	346.3	0.03%	-3.47%	-2.97%	2.10
4		large QT	463.8	459.0	391.5	395.7	-1.03%	-15.59%	-14.68%	0.30
5	Concrete	long rise time	983	981.0	1005.6	967.7	-0.20%	2.30%	-1.56%	0.38
6			909.9	910.0	840.6	827.6	0.01%	-7.62%	-9.04%	0.40
7	Stinger	Stinger pile	1346.0	1341.0	1391.9	1459.9	-0.37%	3.41%	8.46%	1.64 or 0.88 ²
8		41-ft	323.2	323.0	307.6	309.8	-0.06%	-4.83%	-4.15%	1.20
9	H Pile	107-ft	435.3	446.0	446.1	459.4	2.46%	2.48%	5.54%	1.10
10		56.5-ft	1360.3	1343.0	1249.8	1258.5	-1.27%	-8.12%	-7.48%	0.27
11	Concrete	gradual rise	312.1	315.0	316.5	324.1	0.93%	1.41%	3.84%	0.75
12	Becker	Becker BPT	99.9	98.0	114.8	110.3	-1.90%	14.91%	10.41%	0.68
13		115-ft	874.5	872.0	835.5	860.9	-0.29%	-4.46%	-1.56%	0.51
14	Pipe pile	153.7-ft	1038.1	1029.0	925.3	955.0	-0.88%	-10.87%	-8.01%	0.42
15	Concrete	End Bearing	1950.8	1939.0	1972.6	1954.3	-0.60%	1.12%	0.18%	2.00
16	Auger	140-ft, D=36-in	2391.8	2387.0	2388.6	2388.8	-0.20%	-0.13%	-0.13%	0.00
17	Cast	140-ft, D=36-in	2229.3	2236.0	2232.8	2329.2	0.30%	0.16%	4.48%	0.00
18	H Pile	End Bearing	835.4	863.0	916.0	926.6	3.30%	9.65%	10.92%	2.00
Average			931.6	931.0	917.8	929.9	-0.01%	-1.48%	-0.18%	

¹ iN_GAPA from importing txt file

² iN_GAPA results from "Reset Analysis"

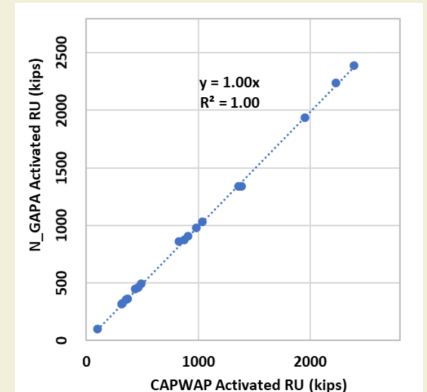
³ Depending on what LE used while in data acquisition mode



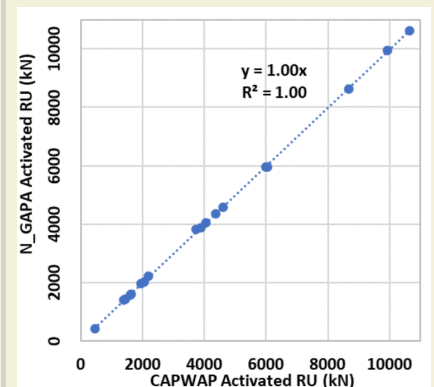
A screenshot from the N_GAPA software, presenting the simplicity and the availability of all the information concurrently.

[See N_GAPA tutorial here](#)

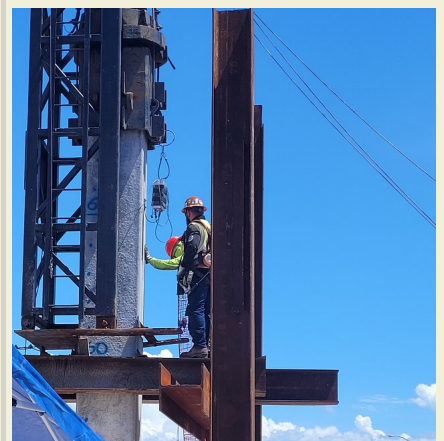
* CAPWAP is a registered trade mark of Pile Dynamic Inc`



Comparison of CAPWAP VS. N-GAPA results



Presenting the strong correlation between N_GAPA and



On site



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