



The very first Cone Penetration Tests (CPT's) were carried out in the early 1930's in Holland using a gas pipe with an inner steel rod which was attached to a conical tip.

The mechanical CPT method, as it is referred to today, has been in use since its induction, and has evolved and improved over the years.

Although the electrical CPT gives much more accurate readings and has more options regarding other parameters (pore pressure, inclination etc.), the mechanical CPT method is still used because of its simplicity, robustness and relatively low cost.

In harder or diverge soils, with for example gravel layers or rock material, the mechanical method is preferred over the electrical method simply because of the impossibility to apply electrical cones in such environment.

The cone can be either a jacket cone, allowing for the measurement of cone resistance and total force, or a friction jacket cone (Begemann cone) to measure cone resistance, local sleeve friction and total resistance. The forces acting on the cone are transferred to the surface by the CPT tubes and inner rods.

The measuring head can be a very simple hydraulic pushing device provided with pressure gauges, whereby the operator visually needs to record the data. Automation of the logging process can be achieved by using an electrical measuring head in combination with the GME-500 data acquisition system. This not only simplifies the test procedure; it increases accuracy and eliminates operator error. Both continuous and discontinuous CPT's can be conducted with this automated system.

With the pulling clamp the cone, tubes and inner rods can be retrieved after completion of the test. The clamp is designed such that it can withstand a maximum pulling force of 260 kN, without damaging the tubes. In addition, the clamp is fully automatic and does not require any action of the operator during the pulling process.

A complete mechanical CPT system consists of:

- mechanical cone
- CPT tubes with inner rods
- measuring head
- pulling clamp

For more technical information or a quotation based on your specific requirements please contact sales@geomil.com or call us at +31 172 427 800.

