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PARALLEL SEISMIC TEST METHOD (NFP 94-160-3) **CONTROL OF THE LENGTH OF CONCRETE FOUNDATIONS OR METAL PILE-PLANKS**

Parallel seismic test method is a standardised method used to determine the depth of a foundation element located under a building or structure. It is also used during foundation works to control foundations devoid of re-entrant tubes for sonic investigation, and when the impedance method cannot be considered. Another of its applications is for the control of the metal pile-planks' length.

A borehole is drilled in parallel of a foundation generatrix or of pile-plank, as close as possible to it and less than 1.5m away, up to 5 meters below the appraised foundation element end point. A PVC tube is placed in the borehole and sealed with cement grout on all its height (tube 52/60 for a borehole smaller than 15 m and 63/75 for a borehole higher than 15 m or in particular geological conditions).

We then measure the travel time of a seismic wave between the top of the foundations or pile-plank and a line of seismic sensors placed in the borehole (0.5m space between each on all of the borehole's height). A seismic wave is generated by hitting a hammerhead at the top of the controlled element. It might be necessary to clear out the top of the element (timbered excavation if necessary). In some cases, the impact can be made on a structural element directly united to the top of the foundation or sheet piling (piercap).

Seismic waves are recorded with a high-precision digital seismic recorder. The data is saved and processed by the engineering department to create a chart of waves' travel time depending on depth. From this chart, we determine the depth of the foundations or pile-plank with a precision of a few decimetres, as shown on the newt page.

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